ICDO8274 JUNE 1983 VOL. 1 NO. 8

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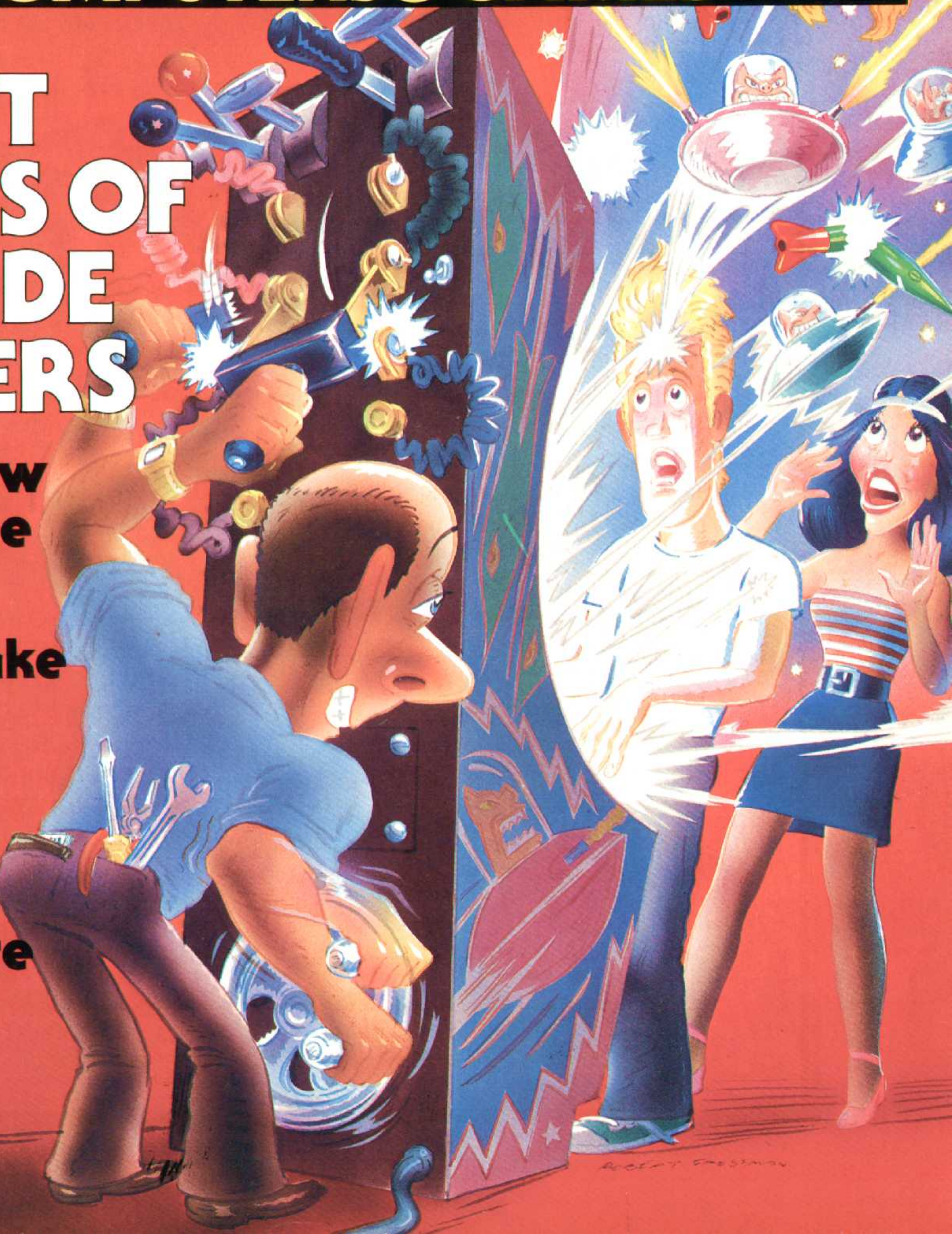
ELECTRONIC FUN

with COMPUTERS & GAMES



SECRET TRICKS OF ARCADE OWNERS

Coleco's new Super Game Module

You can make your own cartridges!

Every game for Commodore computers

06

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Look what
for your VIC 20.

Fast action. Complex strategies. Interesting characters. Superior sound effects. Multiple levels of play.

These are the things you want from your VIC 20.™

They're also the things you get from Tronix. From the people who brought you *Swarm!*, *Sidewinder* and *Galactic Blitz.*

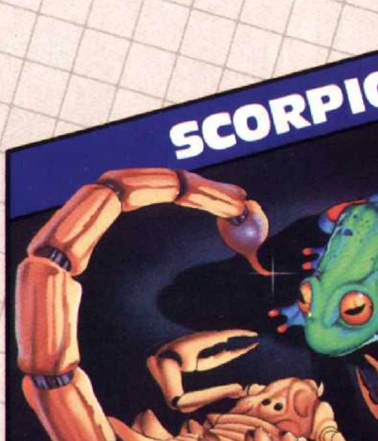
And now, there's more.

Now Tronix brings you the same rewarding rapid-fire excitement in three brand-new game cartridges.

Each one is something different. Something new. But they all have one thing in common.

They're all designed to bring out the best in your VIC 20.

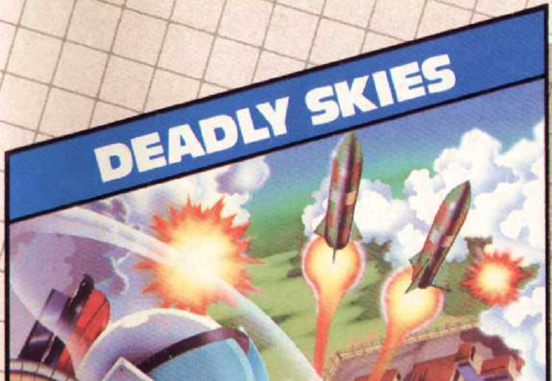
You shouldn't settle for anything less.



By
Jimmy Huey.

In a predatory world of killer worms, dragons, stalkers, pods and fly traps, the scorpion prowls the maze in search of sustenance. Frogs and their eggs mean survival to the scorpion. But they can also mean instant death! (Suggested retail $39.95)

we have in store



By
Thomas Kim.

Your helicopter gunship hovers over the enemy's military bases and missile emplacements. Your mission is to destroy them. But as the sky fills with smart bombs and anti-aircraft fire, there's less and less room for a wrong move! (Suggested retail $39.95)

By
Corey Ostman.

Deep in the earth, a fortune awaits. But the dark passageways are filled with peril as well as profit. Runaway boxcars. Crashing boulders. A claim jumper with murder in his eyes. Be careful. But be quick—oxygen is in short supply! (Suggested retail $39.95)

TRONIX™

8295 South La Cienega Blvd., Inglewood, CA 90301
Look for Tronix games in your nearest store. If you can't find them there, write to us.

VIC 20™ is a trademark of Commodore Electronics Ltd.

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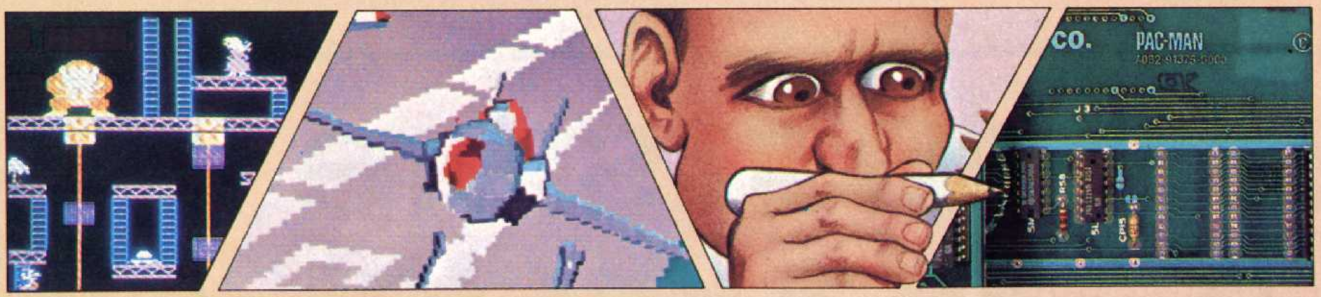

ELECTRONIC FUN with COMPUTERS & GAMES

Special Reports

THE TWO-BIT OPERATION *By Randi Hacker and William Michael Brown* The games they are a-changin'—with a little help from arcade operators that is. Read about the secret tricks arcade operators use to alter your favorite games and make them even tougher to beat **27**

KEYBOARD BYPASS *By Marc Berman* Of mice and pens. Even if you can't type worth a darn, you can still use a computer thanks to a slew of nifty little devices like the mouse, the light pen, the graphics tablet and voice recognition interfaces **33**

COMMODORE BUYER'S GUIDE A comprehensive listing of all the companies making games for the VIC-20 and Commodore 64, including a number of titles that haven't been released yet but will be coming out in the near future **80**

Regular Features

NOW HEAR THIS *By Kim Mills* Talk is *not* cheap . . . yet. But prices on voice recognition peripherals for computers and games are coming down and pretty soon you'll be able to tell your computer where to go **44**

PHIL WISWELL'S GAMEMAKERS: THE ALIEN GARDENER Bernie DeKoven talks about how he makes his *Alien Garden* grow and what he and the other members of the design team at the Children's Computer Workshop have planned in the way of computer games for the novice user **76**

FIRST SCREENING: DRAGON MAZE Near-sighted dragons and dead-end roads in Les Coe's *Dragon Maze* for the TI 99/4A **85**

Cover Illustration: Robert Grossman

Equipment Reviews

GAME WORKOUT: COLECO'S SUPER GAME MODULE *By William Michael Brown* Microcassettes mean maxi game power in Module Number 3 from Coleco power in Module Number 3 from Coleco. *Super Buck Rogers* and *Super Donkey Kong Jr.* are just two of the new games **39**

COMPUTER WORKOUT: THE CORE OF THE APPLE IIe *By Hartley Lesser* A new look, a new logo and almost 100 per cent compatibility with other Apple software **72**

Game Reviews

HITS & MISSILES Michael Blanchet heads for the open road with *Enduro*, opens wide for *Plaque Attack*, and gets his man with *Keystone Kapers*; Randi Hacker dances a hula for *Tropical Troubles* and does it all for you with *BurgerTime*; the Force is with George Kopp in the *Jedi Arena*; Michael Brown really gets his *Qix*, goes all to *Bedlam* and stages the big *Ripoff*; Mark Trost battles *Frankenstein's Monster* while Marc Berman enters the *Crypts of Chaos* and breaks out with *Ram It*. In computer games, Art Levis cleans up with *Trashman* and Hartley Lesser rises from the ooze with *Evolution*; Phil Gerson finds the *Wayout* and Paul Backer pulls *David's Midnight Magic* out of his hat **52**

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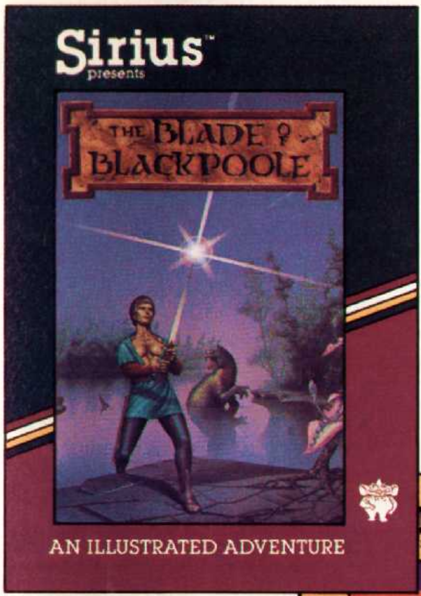
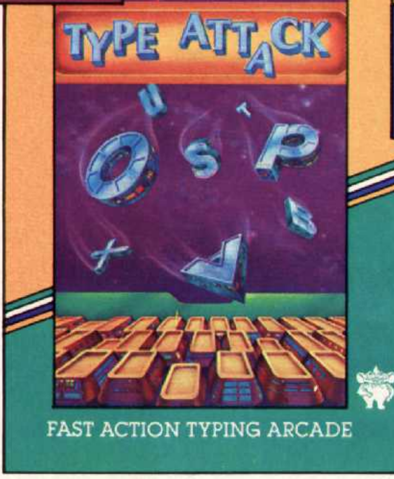
For Heroes Only!



Blade of Blackpoole

Step back in time and join the search for the magical sword of Myraglym. Travel cautiously on your journey for you will encounter dangerous serpents, spine-chilling evils and carnivorous plants that crave human flesh!

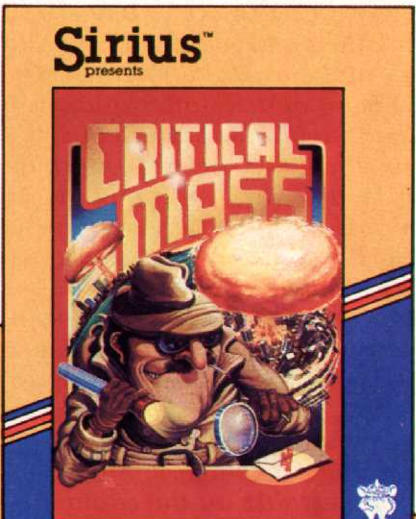
Avail. on disk for the Apple II, II + or IIe and Atari 800 or 1200 and Commodore 64.



Type Attack

The planet Lexicon is under attack! Letters of the alphabet are falling from the sky. To repel them, you must be able to type the letters faster than they can fall. Be quick! An entire civilization is depending on your skill.

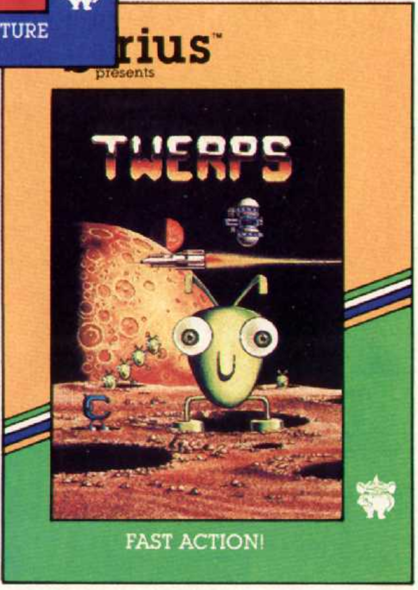
Avail. on disk for the Apple II, II + or IIe and Atari 800 or 1200, IBM-PC and Commodore 64 and on cartridge for the VIC-20.



Critical Mass

On Jan. 1st at 10:00 am, the U.N. received this message: "Good Morning, in exactly 9 days, the world's 5 largest cities will be destroyed by thermal nuclear weapons." At 10:03 am, you received this assignment: STOP . . . THIS . . . LUNATIC!

Avail. on disk for the Apple II, II + or IIe and Atari 800 or 1200 and Commodore 64.



Twerps

The boldest space rescue ever! Defenseless Twerps are stranded on an asteroid. You, Captain Twerp, are to board a Twerpcraft, blast through the Orbiters, land safely and rescue your comrades. Beware of the Glingas and Twerp-eating Gleepnites!

Avail. on disk for the Apple II, II + or IIe and Atari 800 or 1200.

Pure Video Excitement!

For Your Atari 800 or 1200, Apple II, II + or IIe, Commodore 64, VIC-20 and IBM-PC

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Editorial

When the game's not the same

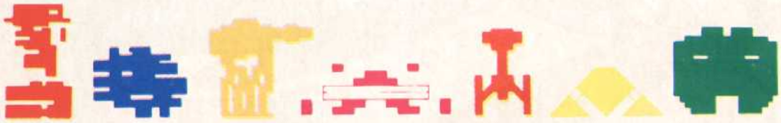
Are arcade owners out to make your life miserable? There are plenty of psychologists and other expert types who believe that video game players suffer from a severe masochistic streak anyway, so a little more misery shouldn't make much difference. Who else, after all, would spend quarter after quarter playing a game that you can't win, no matter how good you get?

In this issue we have the complete story of how arcade games can be adjusted, manipulated, tinkered with, reprogrammed and just generally messed up, all to make them harder to beat. Why? Because you gamers are just too good. You're playing too long on one coin and getting bored with the games you know backwards and forwards. The latest arcade machines will tell the arcade operator at the flick of a switch how many plays it's had, what the highest scores are, how many people have made those scores and practically the shoe size of the top 10 players. After all, underneath that fancy glitz on the cabinet is a pretty powerful computer.

Also in this issue, a sneak preview of the Coleco-Vision Super Game Module, which plays super slim wafers instead of cartridges. The graphics are definitely the best you can get on a home system—so far. We've also got a test report on the Apple IIe computer, and if you're wondering what that little "e" stands for, try "even better."

About the time you're reading this, we'll be gearing up to go to Chicago for the Consumer Electronics Show, the biggest circus this side of Ringling Brothers. Every game company in the world will be there showing off their new titles that will be out for the Christmas season, and of course you'll get a full report right here. As always.

The Editors



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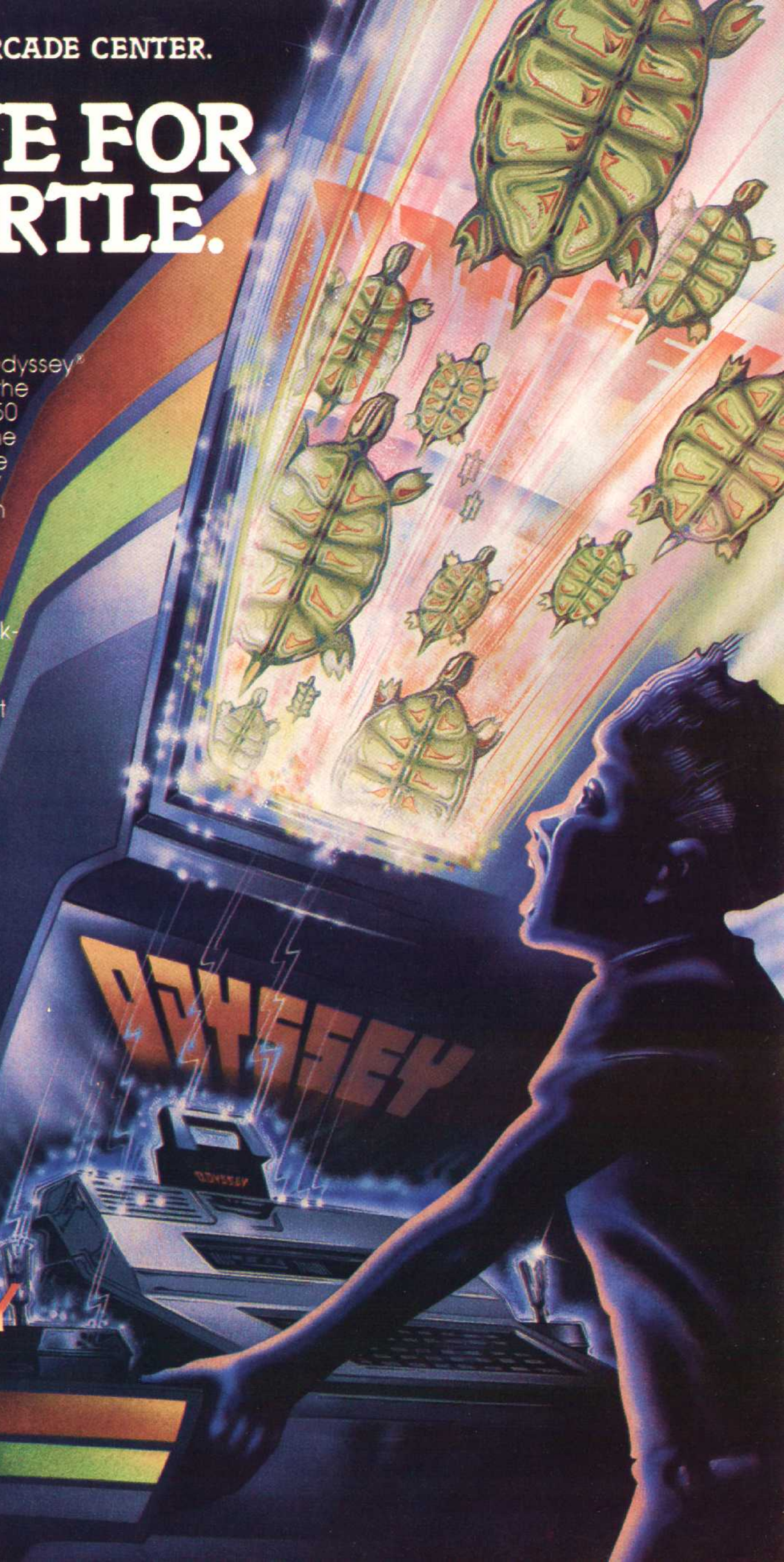
THE ODYSSEY HOME ARCADE CENTER.

WIN ONE FOR THE TURTLE.



Win one of 50 Odyssey Home Arcade Centers! All you have to do is go to the Odyssey® Dealer nearest you and fill out the entry form. You can win one of 50 giant, six-foot-tall Odyssey Home Arcade Centers. And each one includes a big 19-inch color TV screen, Odyssey keyboard, twin eight-position joysticks and, of course, a TURTLES™ game.

You could bring real arcade action into your home by just entering the contest. And speaking of arcade action…

Play TURTLES, the hit arcade game on Odyssey. TURTLES is part maze game, part shell game and all action.

The goal is to guide the mother turtle to hidden baby turtlets without getting "bugged" by the beetles chasing her.

For one or more players, TURTLES features eight different challenge levels plus high digital scoring with memory. And exciting sound effects when played with the Voice of Odyssey.®

Win an Odyssey Home Arcade Center and play TURTLES and all of the over 50 other great Odyssey games.

It's a combination that's hard to beat… but easy to win.

ODYSSEY

No purchase necessary. Void where prohibited by law. Entries must be submitted no later than 6/30/83. See your dealer for contest details or send a self-addressed, stamped envelope to: ODYSSEY Home Arcade, P.O. Box 6950, Knoxville, TN 37914. Winners list available after 8/1/83.

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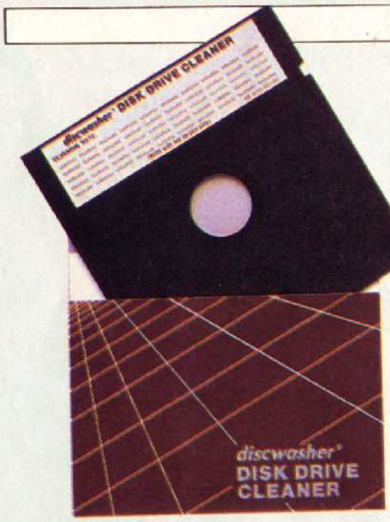
Survival of the fittest; the Vulcan death grip



DISCWASHER

Disk Drive Cleaner $19.95 (5¼") $24.95 (8")

Forget bright, shiny teeth. If you want to really attract members of the opposite sex, you'd better have a clean disk drive. Dirty disks are nowhere. Keep your disk drive squeaky clean with Discwasher's new Disk Drive Cleaner. The system cleans the sophisticated interiors of computer disk drives to help maintain their speed and accuracy. The non-abrasive cleaner utilizes a fiber grid cleaning system and "Perfect path" technology which dislodges and collects foreign matter from sensitive drives. It contains no fluids, is loaded like any ordinary disk and is available in both 5¼" and 8" formats.

Discwasher
1407 Providence Road
PO Box 6021
Columbia, MO

WICO

Interface Card $64.95

Let's interface facts, gang. The IBM personal computer was not designed first and foremost as a games machine. This is fairly obvious from the rather high price. Nevertheless, a number of companies have begun to write games for it and what comes after games? Accessories. So Wico has designed an interface card which allows you to use their trackball and joystick controllers with the IBM.

Wico
6400 W Gross Point Road
Niles, IL 60648

KOPLOW GAMES

Video Survival Kit $5.00

You're in the arcade playing a frantic game of Buck Rogers when suddenly, the guy next to you doubles over in pain with a sprained finger. What do you do? Whip out your Video Survival Kit and get the video finger splint out, of course. You're a hero. The Video Survival Kit was designed to "both caricature and complement" the video game phenomenon. Innovatively packaged to look like a cartridge, the Kit contains all those things the rabid gamer shouldn't go to the arcade without—T-shirt transfers, crossword puzzles and quarter holders among other things. Like a boy scout, a video gamer should always be prepared.

VIDEO SURVIVAL KIT
FIRST AID for VIDIOTS

Koplow Games
PO Box 965
Hull, MA 02045

RG DYNAMICS

VC-1 Videosonic Stereo Phasor $199

Are you tired of playing hi-res games with low-res sounds due to planetary interference? If so, then the VC-1 Videosonic Stereo Phasor is for you. The VC-1 connects most television sets to your stereo system and produces theater quality sound. In this way it cuts down on distortion, eliminates noises and

New Products

hissing and gives you stereo sound, which means more realistic blasts and explosions.

R.G. Dynamics
6440 North Ridgeway
Lincolnwood, IL 60645

NICOLETTI ENTERPRISES

VCH $7.95

Tight jeans and pockets crammed full of loose change (most notably quarters) simply don't mix. If you're really in style, you can put two, maybe four quarters comfortably in the pocket of your Calvins. This is not efficient for an avid gamer. So what's an avid gamer to do? That's where the VCH (Video Coin Holder) comes in. It lets you hold nine dollars worth of quarters (that's up to 36 games, folks) without ruining the line of your inseam. The VCH features a clear plastic coin holder inside a carrying case which fastens with a velcro flap and hangs neatly on your belt. It's available in six assorted space age colors including Galactic Red, Lunar Lavendar, Cosmic Black and Orbit Green.

Nicoletti Enterprises
PO Box 2818
Newport Beach, CA 92663

VCH
FIRE
THRUST
PHOTONS

ELECTRA CONCEPTS

Triga Command Joystick $19.95

According to the company, the Triga Command Joystick puts the firing button "where it should have been in the first place." That is, right under your index finger. Whether you're right- or left-handed, you'll have no trouble blasting enemies with this "aerospace contoured" controller.

Electra Concepts Corporation
125 Wilbur Place
Bohemia, NY 11716

SEGA

Star Trek Strategic Operations Simulator $2,700

Trekkies rejoice! According to Sega the "training system used by crew members of the Starship Enterprise to sharpen their battle skills against the Klingon Empire is now available on Earth." You start with a limited number of Shields and Photon Torpedoes and a limited amount of Warp Drive Energy, and you've got to fight the Klingon Battle Cruisers which exhibit three different hostile tendencies. Each simulation is announced by the First Science Officer and presents faster action and more aggressive Klingons. According to the press release "carbon-based life units" from Earth can obtain more information about this machine from Sega.

Sega
16250 Technology Drive
San Diego, CA 92127

STAR TREK
STAR TREK

PUSHER SALES

Video Game Storage Units $34.95

Unless you really enjoy having your video game cartridges lying over every available open space in the house and tripping over them on your way to the bathroom in the middle of the night in your darkened room, you'll be interested in this new unit from Pusher. It's 15" high, 12" wide, 6½" deep and holds as many as 20 video game cartridges and instruction manuals. If you don't have 20 games, this is a good way to cajole whoever buys them for you into filling out those unattractive spaces in the cabinet.

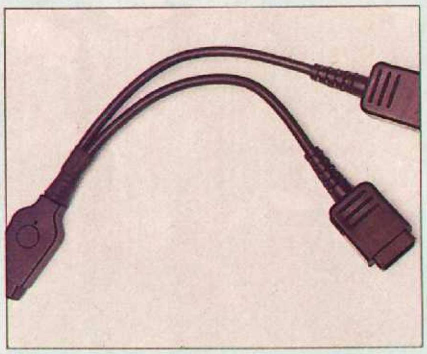
KABOOM!
BOXING
LASER BLAST
SKIING

Pusher Sales Inc.
PO Box 6588
Woodland Hills, CA 91365

RECOTON

V335 Game Switcher $tk

In this upwardly mobile society, the house with only one video game system is the exception. But after a while, it gets pretty tiresome to keep unplugging one and plugging in another depending on what you want to play. That's where the V335 two-game TV game switcher comes in so handy. It permits the permanent connection of two TV games to your TV antenna system. You can select either of two game systems or choose to watch television (if you still use your TV for that outmoded function) with the simple flip of a switch. It comes with 300 ohm input and output.

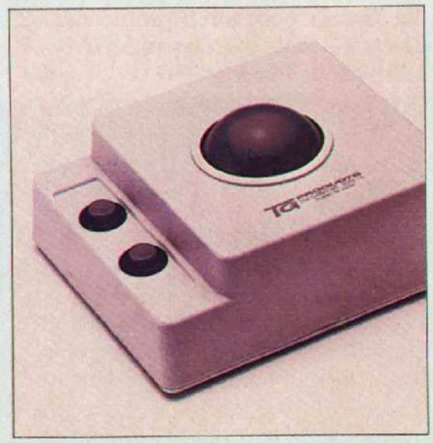


Recoton Corporation
46-23 Crane Street
Long Island City, NY 11101

TG PRODUCTS

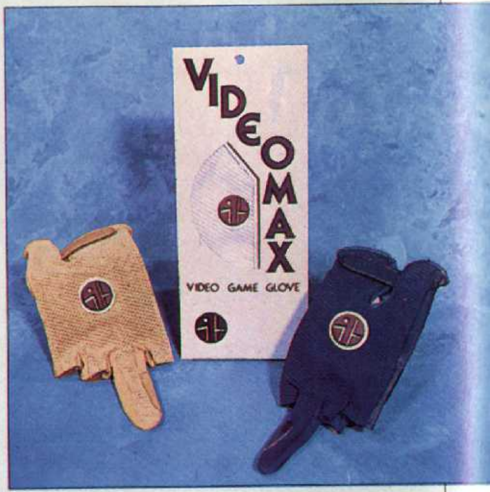
Trak Ball Controller $64.95

The name of the company sort of makes you want to write TGIT (Thank God It's Trakball) but we won't succumb to such a base temptation. The TG Trak Ball is a new omni-directional control designed for games requiring rapid-paced, multiple-movement commands. Trak Ball has two firing buttons set in a shelf that is recessed below the ball control plane for easier firing and unobstructed movement during play.



TG, a longtime maker of accessories for personal computers, has put all its technical know-how behind this controller to give it arcade feel and precision. It comes in models that fit the Atari, Apple and IBM personal computers.

TG Products
1104 Summit Ave, Suite 110
Piano, TX 75074



NANCY AND COMPANY

Videomax Game Glove $6.95

Avid gamers—at last a video game product that solves the problem of sweaty palms—the Videomax game glove. Available in three colors (white, navy blue and gold), the glove has a calfskin leather palm which provides you with a non-slip grip for tough games of, say, *Tempest*. It's got a stretchable net back and velcro wrist fastener. And lefties needn't despair. It's available in both left- and right-handed models and in mens', ladies' and youths' sizes (S,M and L). It may be ordered through the mail (add 45 cents tax and $1.00 for shipping) or you can call the below number collect. Gloves can also be shipped C.O.D.

Nancy and Company
22594 Mission Blvd, Suite 302
Hayward, CA 94541

Letters to the editors

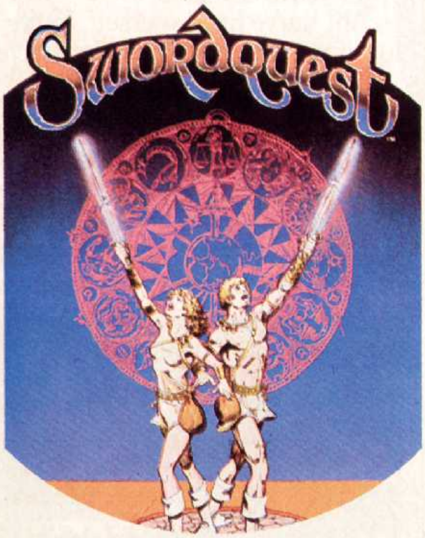
THE DIRECT APPROACH

My name is Derek Millen. My score on *Pac-Man* for the Atari 5200 is 999,995. Could you put this letter in your next magazine, please? Thank you. P.S.: I am nine years old.

Derek Millen
Weston, MA

TIPQUEST

I was wondering if you could give me some hints on how to play the Atari cartridge *Swordquest: Earthworld*. I have read through the directions thousands of times and do everything they say. All I have been able to come up with are two clues on the game and dozens in the comic book. If you're not able to give me this information, can you tell me someone who can—and their address?



Mike Soulakis
Bethel Park, PA

Sorry, Mike, but we're just as stumped by Earthworld *as you are—and with several thousand dollars in prizes awaiting the winner in the* Swordquest *contest, there are probably few who'd hand out free answers. But if anybody out there does have a few hints they want to share, send them along to Readers' Tips and we'll try to print them all.*

PARLEZ-VOUS HUH?

In the February issue you had an article about learning BASIC. You said it would be continued in the next issue, but it wasn't. Do you plan to continue it?

Daniel Yoffee
Orangeburg, NY

Sorry, Daniel. The second installment of "Parlez-Vous BASIC" had to be dropped for space reasons. You should have found it in the April issue by now.

COMPUTERS, PLEASE

Congratulations on printing such an enjoyable magazine. I really like the articles in it, especially your First Screening and Hits & Missiles. Although you should review more video games in Hits & Missiles, the detail of the reviews was excellent. I understand that your magazine deals mostly with games, but I think that you should have more about computers in it. In closing, I would like to say that I enjoyed your magazine so much that I want to subscribe to it. Enclosed is my money order.

Lawrence Ethier
Loreburn, Saskatchewan

ONLY YOU, EF

I have just bought your magazine and I think it is great. I have also bought other magazines, but none of them are as good as yours. So out of six magazines, I am subscribing only to yours. I have an Atari VCS and an Atari 800 computer. Your magazine seems to tell the most about both of them. This is the reason for my subscription. Thank you!

Clark Morris
Orinda, CA

SGM SURPRISE

Is it true that Coleco is making something called a "Super Game Module" for ColecoVision that will double or triple the memory already available for this super system? I heard it will plug into the expansion port on the ColecoVision game system and be capable of some really dazzling effects. What more can you tell me about this new module and when will it be available? Are there any more surprises in store?

Keith Johnson
Inver Grove Heights, MN

You bet there are, Keith. Take a look at our Game Workout in this month's issue. You'll find a very thorough Super Game Module test flight and other news about forthcoming ColecoVision plug-ins.

Continued on page 96

Write to us! We can't promise that we'll answer every letter, but we will read them all. We welcome your comments, advice and questions. Send your letters to: Electronic Fun, *350 E. 81st St., New York, NY 10028*

YOU'VE GOT FROM NOW 'TIL THE END OF THIS PAGE TO BECOME MOUNTAIN KING.

GO!

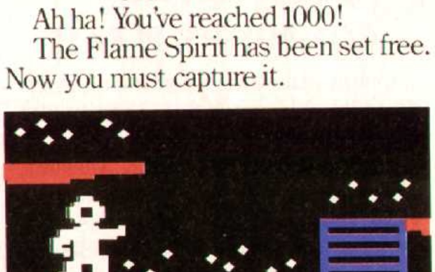
See all those glittering diamonds? Grab 'em.

You need 1,000 diamonds fast. To score, you have to burrow deep. Deep into the caverns.

You craftily cop a dozen jewels. Then, jump to the ledge below. Then down to another. And another. But, STOP!

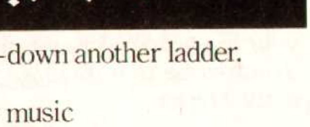
There's nothing but an abyss below. Nothing for you there except a bad fall—and even worse, delay!

No, don't go there. You've already stripped that vein of diamonds. Go where no one has ever dared venture before. Follow the caverns. Deeper and deeper. Down the ladders. Over to the right—more jewels…and CURSES!…you've fallen. And you're losing time. Grab those diamonds. Ah ha! You've reached 1000! The Flame Spirit has been set free. Now you must capture it.



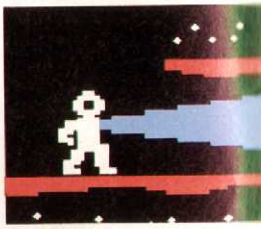
Quick—down another ladder. Listen!

Ghostly music floating through the black tunnels. That means the Flame Spirit is hiding nearby.



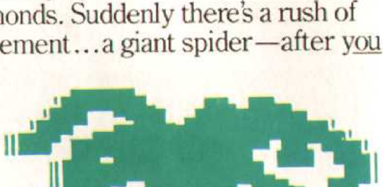
The music grows louder as you draw closer.

Now softer (quick, go back the other way). Louder again. Shine your flashlight. The Flame Spirit is very near. A flicker. Out of the corner of your eye. Shine that light! There it is. Now, kneel before the Spirit and grab it. Gotcha! Run! Run to the Temple. Watch out! Behind you! A vampire bat trying to steal the Flame Spirit. Climb down, below the ledge. Another bat!



Down. To the very bottom of the mountain.

To the pit. And the darkness. Lit only by the shimmer of diamonds. Suddenly there's a rush of movement…a giant spider—after you.

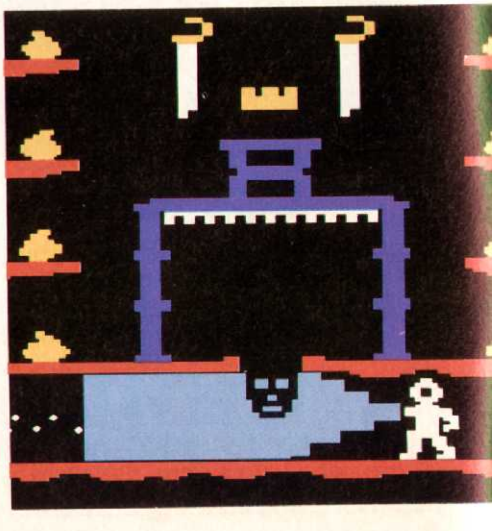


Run. Jump. Up to the ledge. Hurry! Jump again!

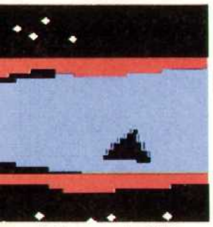
Aarrrrgggghhhh! You're caught. Woven in a tangled web. Hurry, break loose before he returns and you're devoured.

Ah! You've freed yourself. You've lost time, but you've gained character. Now, on to the Temple.

But beware of the guardian flames—one false move and you'll end up charred …and out of the game! Get to the Temple Portal, the Spirit in your grasp. Shine your light on the giant guardian skull. You kneel. (Not out of respect, but out of need—for without



kneeling, entering the Temple is forbidden.)



The entrance yawns open. And you leap in. There, enshrined deep within the sacred Temple, emblazoned with gold, is the sovereign crown. You must get that crown. Without it, you cannot become Mountain King. With it, you'll rule.

But now comes the tough part. Can you make the treacherous climb back to the surface? Can you avoid the relentless bats and spreading cave fires on the way? Can you even find the way?

Get Mountain King.™ Plug it into your home computer. It will plunge you into the depths, and lift you to the heights.

ANOTHER GAME TO DIG INTO.

It's Boulders and Bombs.™ One to four can play. And with 99 levels of terrific tunneling adventure, it's every bit as involving as Mountain King.

Your challenge is to tunnel to safety beneath the surface of an unknown planet as hostile, alien vultures seek to turn you into a buried fossil, entombed in an alien life form.

While day turns to night above ground, you use your trusty roto-auger to claw a path to safety below ground—through tons of earth, boulders, and the ever-spreading green cave fungus.

Fortunately, you can unearth time bombs along the way to blast away the hazards the vultures toss at you.

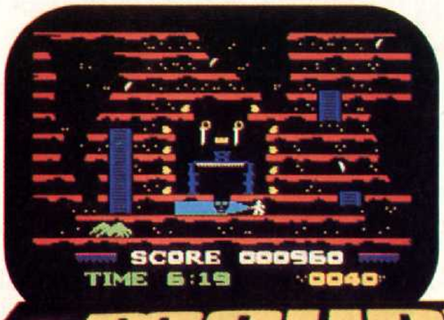
But the crawling fungus spreads as time runs out.

Now that you know the names of these challenging new games, and you know what it's like to play them, there's one other thing you should know:

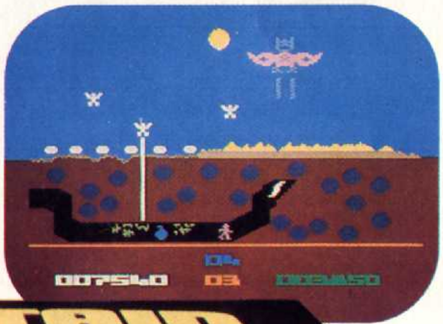
They're from CBS Software. And even though that name says a lot about quality entertainment, we haven't mentioned it until now.

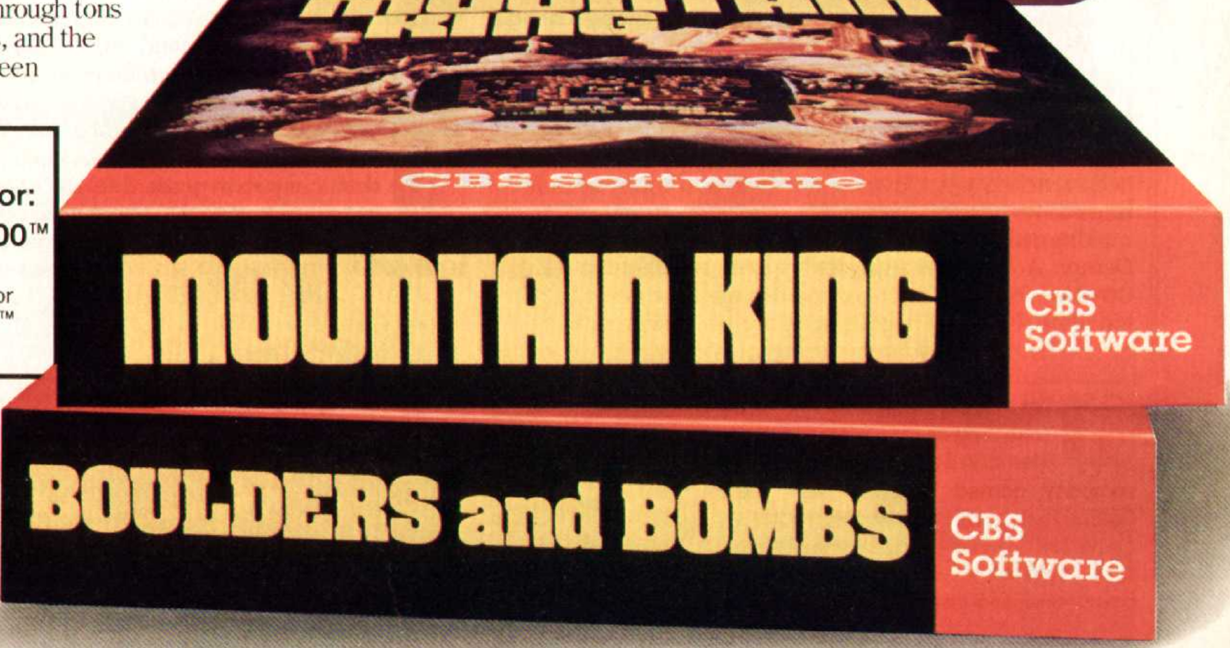
Because at CBS Software, we believe our computer programs should speak for themselves.

NEW! MOUNTAIN KING



NEW! BOULDERS AND BOMBS





ROM Cartridges for: Atari® 400/800™

(Mountain King available soon for Commodore 64™ and VIC-20™)

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CBS Software. You know what you're getting.

output input

Every major video game company has at least two licensed arcade games except Odyssey² and I happen to own one. There are some rumors about a TURTLES cartridge for the system but so far I don't know of it. Could you tell me if Odyssey² has any plans to license any arcade games and why don't companies like Coleco or Imagic make any carts for the Odyssey?

Joseph Kozun
Manitoba, Canada

Take heart, Joseph. Not only is Stern's *Turtles* available (it was released at the end of April) but Odyssey is actively pursuing other licenses even as you read this. Although no firm agreements have been reached yet, Odyssey hopes to add many arcade titles to its library. And as far as other companies' making games for your system, Imagic already does—*Demon Attack* and *Atlantis* are both available in the Odyssey format. Other companies have expressed interest as well, and negotiations are underway now.

I'm writing to you to find out where I can take my Atari 400 to upgrade its memory. So far I found out that a company named "Mosaic" sells the boards, but I can't find the company's name in the yellow pages. Where can I take my Atari where they can sell me the board and also install it? I hope you can help me.

Miriam Mandry
Elmhurst, NY

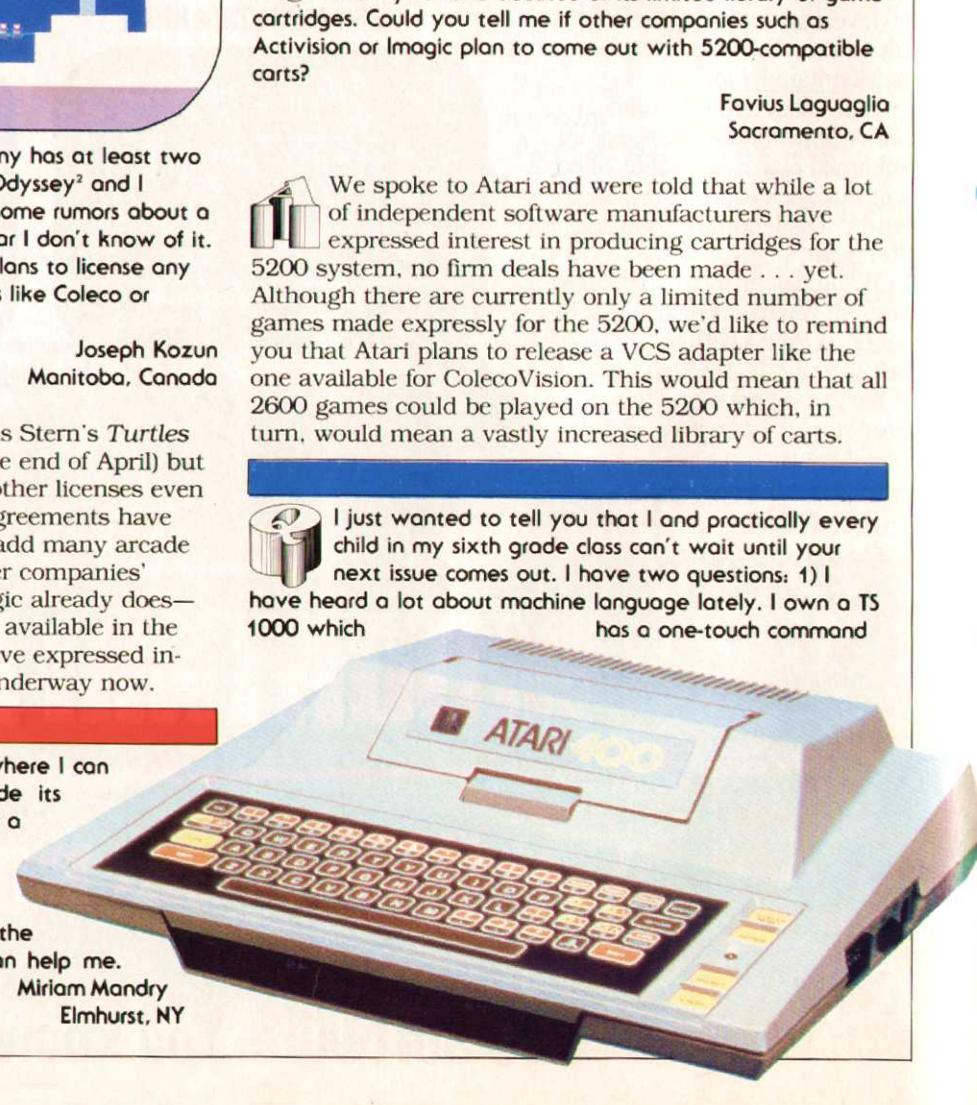
Of course we can help you. Atari has a toll-free number for specific areas in the United States which connects you with someone who can tell you the service centers closest to you. In the New York area, call (800) 538-8543. Someone there should be able to get you in touch with someone who can upgrade the memory on your machine.

I am very interested in purchasing an Atari 5200. However, I have reservations about putting out the money for one because of its limited library of game cartridges. Could you tell me if other companies such as Activision or Imagic plan to come out with 5200-compatible carts?

Favius Laguaglia
Sacramento, CA

We spoke to Atari and were told that while a lot of independent software manufacturers have expressed interest in producing cartridges for the 5200 system, no firm deals have been made . . . yet. Although there are currently only a limited number of games made expressly for the 5200, we'd like to remind you that Atari plans to release a VCS adapter like the one available for ColecoVision. This would mean that all 2600 games could be played on the 5200 which, in turn, would mean a vastly increased library of carts.

I just wanted to tell you that I and practically every child in my sixth grade class can't wait until your next issue comes out. I have two questions: 1) I have heard a lot about machine language lately. I own a TS 1000 which has a one-touch command



system. Is it possible to program machine language on it? 2) Where would I find a book on how to program in machine language?

Will MacNeil
Bronxville, NY

Good news. Yes, you can program in machine language on your TS 1000. The book you want which covers that language on the TS 1000 is called *Mastering Machine Code* by Tony Baker. It should be available at any of your local bookstores. *EF* will be running an introduction to assembly language soon, and an article on machine language won't be far behind.

I have bought all of your magazines so far and I must admit they are great. I really like the "Hits and Missiles" section but so far I haven't seen any reviews of Vectrex games except for the article "Vectrekking." I own a Vectrex and would like to have some information on the games available for that system. Thank you.

James Rich
Houston, TX

We're beginning to give Vectrex more coverage. In fact, if you look in the March issue, you'll see a review of *Space Wars* by William Michael Brown. And that's not all. In the April issue there's a review of the new Vectrex game *Web Wars* and we've got *Bedlam* and *Spike* (the talking game) on deck. We'll try to include a game by Vectrex as often as we can in the future.

I have an Atari 400. In your magazine I have read about several game cartridges for that computer. I haven't the slightest idea where or how to get them. Can you please send me the addresses of the following companies: Epyx, Synapse, Muse, CBS and PDI.

Robert Kugler
Floral Park, NY

Sure. Epyx, 1043 Kiel Ct., Sunnyvale, CA 94086; Synapse, 5327 Jacuzzi Street, I, Richmond, CA 94804; Muse, 347 N. Charles St., Baltimore, MD 21201; CBS, 41 Madison Ave., New York, NY 10010; and PDI, 95 E. Putnam Ave., Greenwich, CT 06830. If you're interested in the names and addresses of other companies which manufacture games for the Atari computers, you should really find a copy of last month's *EF* and take a look at the Complete Gamer's Guide to game software for Atari computers.

I read in your February 1983 issue about a new voice synthesis interface for GCE's Vectrex Arcade System. Do you know when it will be released or how much it will cost?

Holt Slack
Plano, TX

You've got it a little mixed up, Holt. There's a talking *game* for the Vectrex but no voice synthesis interface. Why? Because the Vectrex has speech capabilities built right into the console—it has an arcade sound chip, you know. No peripherals are needed to make Vectrex games talk. The first of the talking games is called *Spike* in which Spike has to rescue his girlfriend Molly from the clutches of someone out to do her only harm. The scheduled release date was the end of May, and it should cost between $25 and $35.

SPIKE! HELP! HELP!

Could you please give me the address of Starpath? I'd like to get one of their game catalogs.

Chad A. Schiffner
New Boston, TX

Sure thing. You can write to Starpath at: 2005 De La Cruz Boulevard, Santa Clara, CA 95050. You'll be happy to know that Starpath is working on a number of exciting new games with their usual great graphics.

Do you have a question about video games or computers that needs answering? Send your questions to: Electronic Fun, *350 E. 81st St. New York, NY 10028.*

THE BEST G
JUST GOT

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When you own ColecoVision, you own a powerful computer.

A computer that creates graphics more advanced than any other video game system.

And all the new game modules you see here are just the beginning.

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Feel the arcade quality joystick and built-in speed roller.

Use the multiple player select buttons to move as many as four different players at once.

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The Super Action™ controller set comes with Super Action Baseball© as a bonus. And will be available this June.

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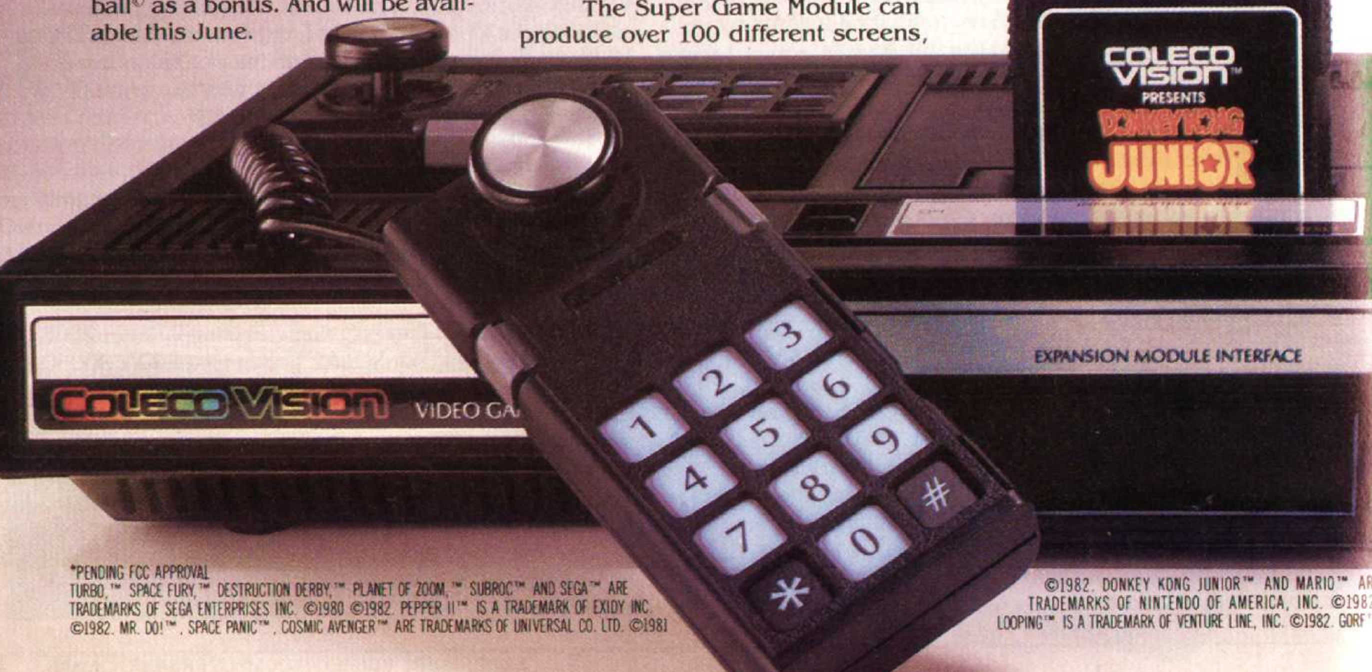
Boost the memory of your ColecoVision to equal the memory of most coin operated arcade games.

Achieve over 15 times the memory of an Atari 2600® VCS™ cartridge.

Unleash astounding graphic resolution and game variations that surpass even the real arcade.

The Super Game Module can produce over 100 different screens, when required. It displays bonuses. Intermissions. Even lets you enter and store your initials in the "Hall of Fame". The Super Game Module will be available this August.

And it comes with two bonus Super Games: Buck Rogers™ Planet of Zoom™ and Gorf™.



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KABOOM!
RIVER RAID
CHOPPER COMMAND
LASER BLAST
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SPIDER-MAN
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The Expansion Module.

Play more games on ColecoVision than on any other system.

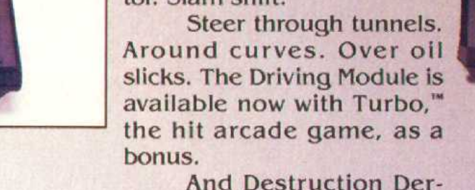
Play any cartridge made for the Atari 2600® VCS™ by Atari, Activision,™ Imagic,™ Sears Video Arcade™ and more. The expansion module is available now. So, now choose almost any game made, and play it on the best system ever made. ColecoVision.

The Driving Module.

Take the wheel of a high performance race car. Step down on the accelerator. Slam shift.

Steer through tunnels. Around curves. Over oil slicks. The Driving Module is available now with Turbo,™ the hit arcade game, as a bonus.

And Destruction Derby™ and many others are coming soon.


ROLLER CONTROLLER

The Roller Controller.*

Quick. Responsive. The Roller Controller is a whole new way to play most joystick controlled ColecoVision games.

It gives you a 360 degree field of movement. Lets you fire up or down. And the faster you spin the ball, the faster your on-screen object reacts.

The Roller Controller is coming this July. And, as a bonus, it comes with Slither,™ the lightning fast arcade game.

Dazzling New Games.

Arcade games. Sports games. Adventure games. And more. Games like Donkey Kong Junior.™ Space Panic.™ Looping.™ Pepper II.™ and Space Fury.™ All available now.

Games like Destruction Derby™ and Super Action Football© coming in June. Rocky,™ SubRoc,™ Mr. Do!™ coming in July. And Time Pilot™ in August.

ColecoVision is the first truly expandable video game/home computer system. And today is just the beginning. Because ColecoVision is the system of tomorrow.

COLECO VISION PRESENTS
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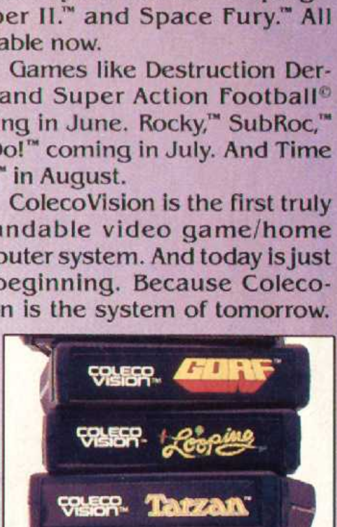
The Official SPACE FURY
by SEGA
COLECO VISION PRESENTS
The Official BUCK ROGERS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If You Liked Donkey Kong,
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JUMPMAN. THE COMPUTER ACTION GAME.

If you liked jumping over barrels and climbing ladders to save damsels in distress, you'll love the blazing excitement of JUMPMAN. Your incredible speed and jet boosters let you leap from girder to girder, scale ladders and ropes to disarm the bombs planted in Jupiter Headquarters. But it's not easy and there are thirty levels of difficulty. You'll have to dodge missiles, killer robots, flying saucers, crumbling girders and vanishing escape Routes. In the heat of battle, JUMPMAN must keep a cool head.

EPYX

The Award-Winning Computer Games

Epyx, 1043 Kiel Court, Sunnyvale, California 94086

JUMPMAN Designed by Randy Glover
DONKEY KONG is a trademark of Nintendo of America, Inc.

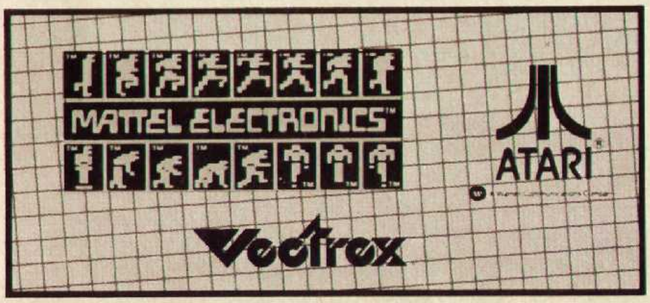
E.F.G. Times

VOLUME ONE, NUMBER EIGHT

JUNE 1983

NEW GAMES BY THE TRUCKLOAD

It seems there's no end to the new releases coming from the coast—Silicon Valley and points south, that is. Intellivision has many new tricks up their sleeves including the computer adaptor and keyboard for *all* Intellivision units—I through III. That's right, III. There is an Intellivision III—release dates are not known as yet but it is state-of-the-art with LED indicator lights and a sleek new design.



Everybody wants to get into the act!

Back to the much discussed keyboard: The computer adaptor and keyboard will be sold together and will have a substantial amount of user programmable memory. Using the keyboard, you Intellivision owners will be able to modify and customize some of the games available for the sytem—for example, in *Scooby Doo's Maze Chase*, not only are there 15 different mazes (which you can change), but there's also a mode which will enable you to create your own mazes. There's also the music synthesizer with eight octaves which will place the notes you play directly onto the screen.

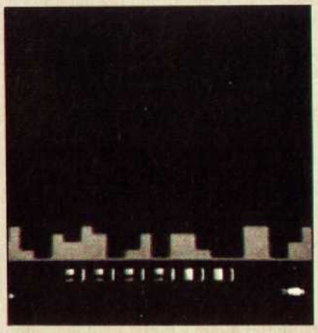
Good news. All the peripherals (except one) from Mattel are totally compatible with *all* the Intellivision systems. The exception is the Systems Changer which lets you play all Atari VCS carts on your Intellivision. If you want to use it with your Intel I, you've got to have a factory adjustment made. But that's the only peripheral that requires any modification of the master component.

Vectrex will also be marketing a computer keyboard with word processing capabilities, games that can be modified, music synthesizers and educational programs. By placing the Vectrex unit on its side, you'll be able to get up to 80 columns! New games from Vectrex include: *Star Castle*, *Pole Position* (Yep. Atari's *Pole Position*), *Dark Tower* (an adaptation of

Continued on page 20

Monthly Contest

We had a tie in our March contest—*Defender* from Atari. In the case of a tie we hold a random drawing to choose the winner. Top *Defender* player of the month is Richard Carmean. We can only judge on the basis of the pictures you send us, not your word. So no matter how many times you roll a game, take a picture of the highest score.



Defender *winner: 999,900*

By the way, to get a good picture from a screen: Do NOT use the flash. Turn out the lights and turn up the brightness control.

This month's contest: *Donkey Kong Jr.* on ColecoVision. Send a picture of your highest score to June Contest, *Electronic Fun*, 350 E. 81st St., New York, NY 10028. The deadline: June 20.

Winnah and Still Champeen

For a moment it seemed that 19-year-old Golden Gloves champ and Olympic hopeful Mark Breland was going to meet his first defeat in an unbroken string of victories—right there, on the floor of New York's teaming Magique disco, squaring off over a hot Activision *Boxing* cartridge against a man in a tuxedo.

Sugar and Breland: Sugar's no Sugar Ray

Mark shouldn't have worried. The man in evening clothes was Burt Sugar, editor of *Ring* magazine, the bible of "the sweet science." And while Burt knows a lot about boxing, *Boxing* was his downfall. Mark and ring superstars Archie Moore and Vita Antuofuermo drubbed the *Ring*master unmercifully.

ZAXXON WHIZZETTE DEFIES THE EXPERTS

In an article in the March issue of *Psychology Today*, a team of social researchers from three universities claimed that the video arcade is basically a boy's world.

SUPER ZAXXON
SEGA

Susan Fandler at play: Equal opportunity

They've obviously never met Susan Fandler here. Susan is a department store employee whose favorite arcade game is the super-macho *Super Zaxxon*. She spends a lot of her lunch hours and Saturday afternoons whipping *Super Zaxxon* at the Yellow Brick Road arcade in San Diego, California—and she doesn't need an escort, thank you.

"I don't usually care for space games, but *Super Zaxxon* is really different," Susan says. "I like it a lot because it has a lot of movement and action."

And does she feel out of place playing a macho game?

"Absolutely not," she laughs. "Why should the guys have all the fun?"

Benefit

A competition of a different type was held on January 22 and 23 in Indianapolis. In conjunction with the National United Cerebral Palsy telethon, contestants paid $1 to play Activision's *Pitfall!*, were given one minute to warm up and five minutes to play for a chance to qualify for the finals. Nearly $400 was raised for UCP. Prizes included two AM/FM stereo cassette radios, two Atari 2600 systems, *River Raid*, *Spider Fighter* and *Sky Jinks* carts, and Starfighter joysticks.

Harry, Jr. and friend

Continued from page 19

Milton Bradley's electronic board game), *Polar Rescue* and *Spinball*, a video pinball game which tilts if you're too rough with it.

And for those who've been holding their breath wondering what Atari's cartridge release schedule is, it's printed below through September:

2600

May—*Galaxian*

June—*Jungle Hunt*, *Kangaroo*

July—*Pole Position*, *Dig Dug*, *WaterWorld*, Children's Computer Workshop carts, Disney games

5200

May—*Space Dungeon*

June—*Pole Position*, *Kangaroo*

July—*Vanguard*, *RealSports Baseball*, *Roadrunner*

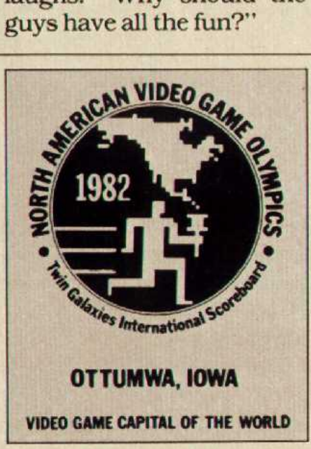
August—*Joust*, *Moon Patrol*

September—*Pengo*, *Sport Goofy*

Naturally, as soon as we get an update on this info, you will too.

First City Of Games

Many of you have probably spent countless sleepless nights wondering just where the capital of the Video Game world was. Wonder no more. Ottumwa, Iowa, has been given that lofty title. Ottumwa, the home of the Twin Galaxies International Scoreboard, was named capital by the governor of Iowa. Run by Walter Day, Twin Galaxies was recently the host of a competition to determine the national video arcade game champ. The final results were broadcast on "That's Incredible." Nineteen hand-picked video game superstars participated in an arcade pentathlon featuring *Donkey Kong Jr.*, *Super Pac-Man*, *Millipede*, *Joust* and *Frogger*. The top three finalists were flown to Hollywood to compete.


NORTH AMERICAN VIDEO GAME OLYMPICS
1982
Twin Galaxies International Scoreboard
OTTUMWA, IOWA
VIDEO GAME CAPITAL OF THE WORLD

Hawkeye hub

Contestants had to achieve a certain score on each of five games and then run across a finish line. The winner was Ben Gold of Dallas, TX, with the second and third place winners crossing the finish line less than 15 seconds after he did.

Quote Of The Month

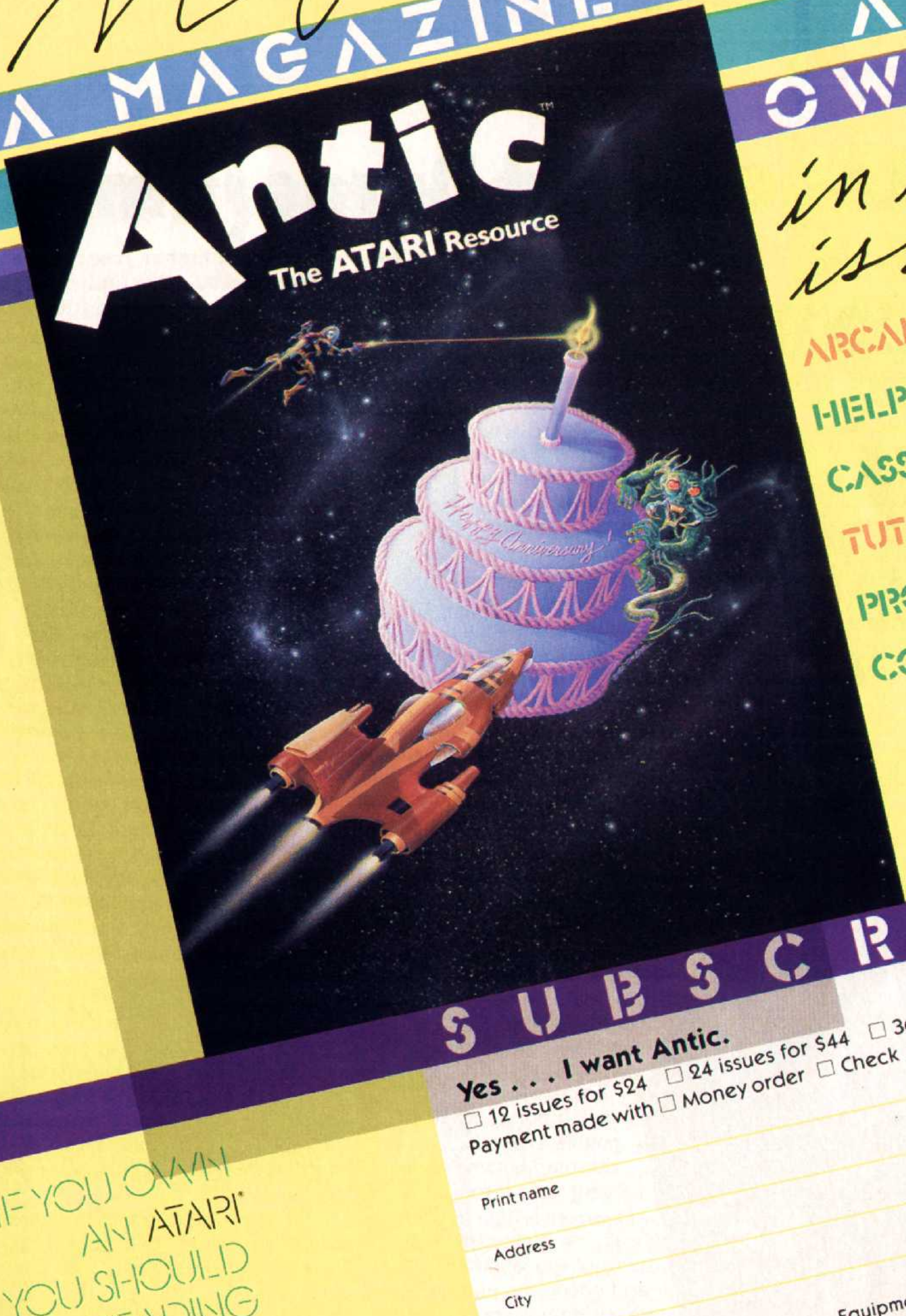
"Video games will be the Trojan Horse that brings computers into the home."—John Farnsworth, Senior vice-president, Chemical Bank.

Department Of Corrections

In the April Hits & Missiles Art Levis reviewed a game for Odyssey/Odyssey^2 system called *Smithereens*. For those who are interested, Art gave *Smithereens* a joystick rating of two and a half.

now!

A MAGAZINE JUST FOR ATARI® OWNERS



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Screenplays

Buck Rogers and Burgertime:

By Michael Blanchet

BUCK ROGERS

Buck Rogers was around a long time before I was. Chances are he was here before you were, too. All I know of the time-travelling space adventurer is what I saw in the dim-witted and ill-fated prime time TV series of a few years ago. So when I stumbled upon Sega's *Buck Rogers Planet of Zoom*, I didn't brace myself for a very scintillating experience. In fact, I didn't even hold my breath—not until I finished my first game, which lasted all of twenty seconds.

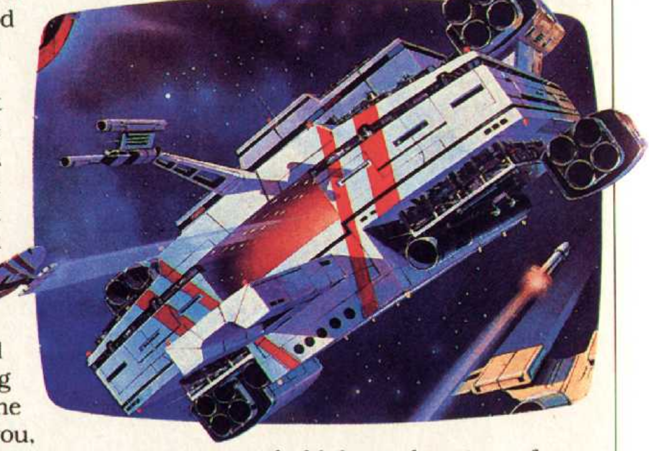
Buck Rogers, no thanks to its name, is one of those rare coin-ops that leaves you with sweaty palms and a palpitating heart. Visually, there's just nothing else like it. I bet they could have named it Mr. Rogers' Neighborhood and the game would still be a hit.

The game puts you at the helm of a remote controlled spaceship. Unlike your garden variety third-person game, *Rogers* seats you front row center—you see your ship as if you were sitting right behind it. Instead of scrolling laterally or vertically, the playfield rolls toward you, giving the sensation of movement. As you fly, objects in the distance loom larger and eventually whiz past you.

Your mission is to reach the Source ship and knock out its four engines. Once this is done, one direct hit will vaporize your nemesis.

To reach this showdown, you must first survive a bunch of smaller battles. The game is divided, *Zaxxon*-fashion, into half a dozen smaller contests which alternate between low-flying runs through *Death Star*-like trenches and free flights through piles of space garbage and oncoming enemy ships.

Your ship is controlled by an eight-position joystick similar to the one found on *Zaxxon*. The stick, however, does not propel your craft—it only steers it. To move, you must depress either the fast or slow speed button. Laser blasts are unleashed by either of the two panel-mounted fire buttons or the stick-mounted trigger. Unlike *Zaxxon*, you can hold down the trigger for continuous firing.



BUCK ROGERS
PLANET OF ZOOM
SEGA

Buck Rogers has no fancy intro sequence—the second you push the start button, you're off. And I mean the second! It starts almost too quickly, so be ready. You can lose your first ship in the blink of an eye.

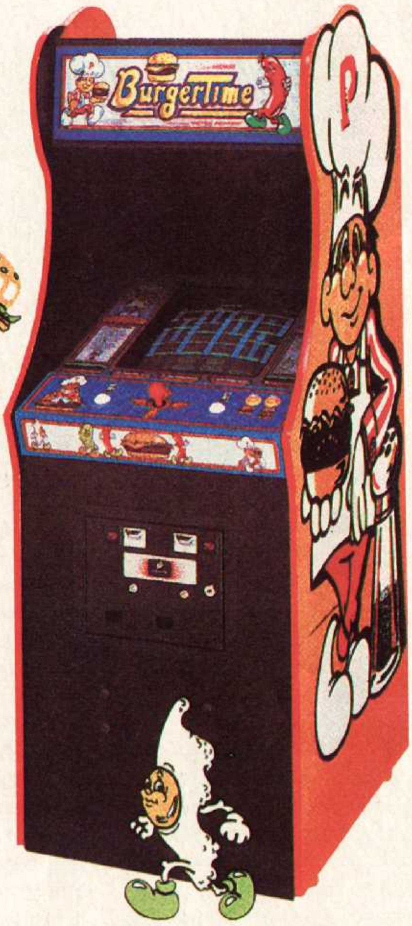
Since you are awarded points on the basis of how fast you are travelling (as well as what you hit), go full tilt throughout the entire game. To reach top speed, hold down the fast button until the speed indicator reads "99." Then you can let go. You'll continue at this clip until either your ship is hit or you press the slow button.

The first battle doesn't require much in the way of strategy: Just blast everything that comes down the pike. Whatever you do, don't stay in one place too long. The oncoming ships will launch missiles at you that you won't see because what is directly in front of your ship is obscured from your view by the silhouette of the ship itself. This rule

Continued on page 93

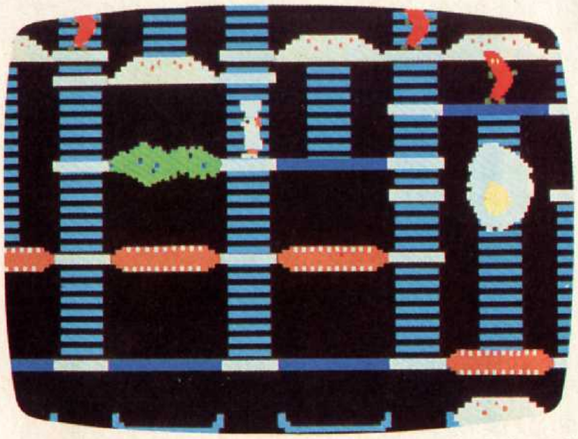
Aren't you hungry?

BurgerTime



Just when I was about to lose all faith in the ingenuity of game designers, I found *BurgerTime*—a simply preposterous, silly and stupid game that is also funny, challenging and quite original. *BurgerTime* is the quintessence of the new pop culture—the first arcade marriage of the American institutions known as fast food and video games.

In the game you are burger meister Peter Pepper. Your job is to scale a grid of ladders and platforms which contain various burger parts such as patties, buns, cheese and mats of peculiar looking green stuff which I assume is lettuce. The ingredients are scattered over six to nine tiers in each of the six different screens. Utlimately, Peter hopes to assemble all of these goodies in a row of pans that run along the bottom of the screen. To do this, he must walk across each ingredient. I don't think this method is company policy at McDonald's or Burger King (then again, you never know), but it gets the job done here. Each time Pete trots over an ingredient, it drops down one level. Like dominoes, each burger part below drops down one notch also.



BurgerTime is not the simple rack-em-stack-em operation it may sound like. Of course, there are villains to contend with, namely Messrs. Egg, Hot Dog and Pickle. This comestible trio is out to foil Pete by running into him. If caught, our hero chef whithers like a souffle.

He does have one means of defending himself—pepper. With a tap of the pepper button, Pete will toss one shake of the spice in the direction he is facing. Any villain within range is temporarily incapacitated. When the villain turns brown, Pete can pass right through him.

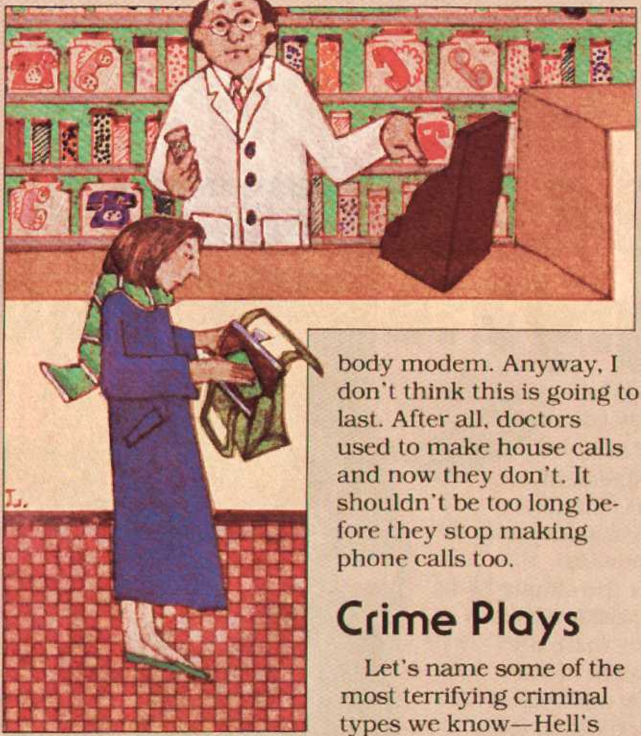
BurgerTime was developed by Data East and was later licensed by Midway. Both have produced coin-op versions, and both versions are identical insofar as graphics and game play are concerned. You may find the Midway version a little easier to play, especially if you are left-handed. The four-way joystick which pilots Pete around the screen is centrally located and flanked by a pair of pepper buttons on the Midway control panel—as opposed to the Data East rendition, where the stick is stuck at the far left. I also found the Midway controller a lot more responsive than its Data East counterpart.

Strategies for both versions are identical. Since a felled ingredient knocks the condiment below it down one notch too (and so on), starting at the top of each maze can save a lot of steps. Pepper is your most powerful weapon, but its supply is limited. At the beginning of each game you are allotted five shakes. Save it for later rounds when you'll really need it. In the earlier stages of the game, you can thwart your pursuers by dropping burger parts on them in much the same way you crush Pookas and Frygars in *Dig Dug*.

Messrs. Hot Dog, Egg and Pickle behave a lot like the ghosts in *Pac-Man*. They follow you and, more or less, mimic your actions. By moving up and down the screen you can get your foes to follow you. Since you can move much faster than them and are capable of taking a more direct route, position yourself so that they will be easy marks for

Continued on page 93

Prepared and ready to ware



Reach Out And Cure Someone

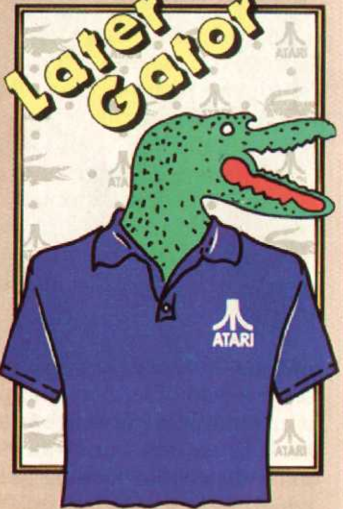
You've heard of Dial-A-Joke? You deposit a dime, dial a number and you get Henny Youngman asking you to take his wife, please. All hail the advent of Dial-A-Doc. You deposit a dime, dial a number and get a doctor telling you to take your medicine, please. Well, not exactly but close. A patent (number 4,373,527 if you must know) was recently granted for a medication infusion system that would allow physicians to give medication over the phone. How? A patient would have a medications infusion system implanted in his body which would be controlled by a microcomputer. The phone would then interface with this device and through it, the doctor would be able to regulate the amount of drugs released with a simple phone call. Sort of like a body modem. Anyway, I don't think this is going to last. After all, doctors used to make house calls and now they don't. It shouldn't be too long before they stop making phone calls too.

Crime Plays

Let's name some of the most terrifying criminal types we know—Hell's Angels, pirates, 10-year-old Japanese boys in short pants and baseball caps, the Mafia . . . Hold it! Ten-year-old Japanese boys in short pants and baseball caps? It's true. Apparently a gang (or two) of 10-year-old Japanese boys in Tokyo have taken to breaking into homes and shops and stealing cash in order to spend it in video arcades. In 30 robberies they netted as much as $39,800, which they hid in a forest. (Unfortunately, we were unable to get the name of the forest. Rats.) In Japan, one play of a video game requires a 100 yen coin (about 43 cents) and kids, it seems, often spend two to three thousand yen in one visit. These kids were in desperate need of recreational money. Clearly they really had a *yen* to play.

Computer Sportsware

If you can't program it, wear it. That's what we always say. Well, not always—in fact, only recently, when we heard that the logos of certain computer companies had found their way to T-shirts and sweaters. That's right, preppies. Even if you can't run a computer, buy one of the new line of T-shirts being offered by Dreamweavers Needleworks of Newport, RI and you can at least run *in* one. The new line—called Wearable Software—will include T-shirts with apples and phrases such as "I ♥ my IBM PC" on them to replace the very outmoded alligator. They'll even create their own designs and slogans such as "I'm a bit-head" accompanied by a picture of a person with a bite taken out of his head. What's next? A line of designer floppy disks, no doubt from Gloria Vanderbyte.



Semi-Precious Conductors

One way to cure yourself of compuphobia (assuming that you suffer from it) is to immerse yourself in the technology gradually. First look up the word "computer" and learn to spell it. Next, wearing a slouch hat, dark glasses and a trench coat, saunter by a computer store and peer slyly in the window. Next, you can try wearing parts of the computer. Really. Computer FX in East Lansing, MI has begun to market what they call circuit art. "Each decorative motif incorporated into the collection is an au-

Glitches

thentic circuit board composed of the genuine materials used in the manufacture of computers," says Lawrence Meyers, chairman and CEO of the firm. You can get anything from money clips to belt buckles to necklaces and barrettes. Gold is only 14K but some of this stuff could be as much as 64K. Anyway, once you get used to sporting small components, it will be much easier to graduate to the real thing but frankly, I don't know. Mounting a full-function computer on your belt wouldn't do much to help keep your pants up and wearing a computer as a barrette could be awkward, especially with all those peripherals getting in your eyes.

Penmanchips

There's a lot of talk these days about computer literacy and illiteracy, but what about computer illegibility? According to an elementary school principal in Bloomfield, NJ, computers have contributed to the downfall of legible penmanship. (I don't know about that. I can trace the illegibility of my handwriting to the development of the pen.) Instead of studying cursive, everyone is studying cursors. The result of all this is that handwriting is a mess. And the phenomenon is not restricted to kids. One mail order company reported that more than 10,000 orders received were illegible, and one fund drive seeking volunteers was unable to read a great percentage of the names. What we need is someone to create a program to improve penmanship. You simply type in the words and . . . well, no. On second thought, that won't work at all.

Be Prepared, Courteous And Programmable

What, we'd like to know, is the world coming to? We are a nation that is rapidly moving indoors. No more hikes or picnics. We watch TV or play video games and anyone who doesn't like it is accused of being behind the times. Well, no one can accuse the Boy Scouts of being behind the times, despite the fact that they haven't changed the style of their uniforms since 1666. In addition to awarding merit badges for the usual useful achievements such as helping little old ladies across the road and tying knots, there is now a merit badge in computer-related activities. We'd like to know what the requirements of this particular award are. An educated guess leads us to believe that those seeking merit badges in this area have to program the computer to tie knots, help hi-res little old lady frogs across five lane highways, make tooled leather floppy disk carrying cases and start fires by rubbing two joysticks together.

K Is For Kosher

There's old time religion and there's computer time religion and one of the latest entries in this category is *Crumb Eater*, the arcade action game for Passover. A *Pac-Man* style character runs around gobbling up all the crumbs in the house readying it for the holiday. We hear that you have to set aside one set of joysticks solely for this game.

Diane LeMasters, Bob Winterson, Pat Kinsley, Janine Gevas, Kris Boyd

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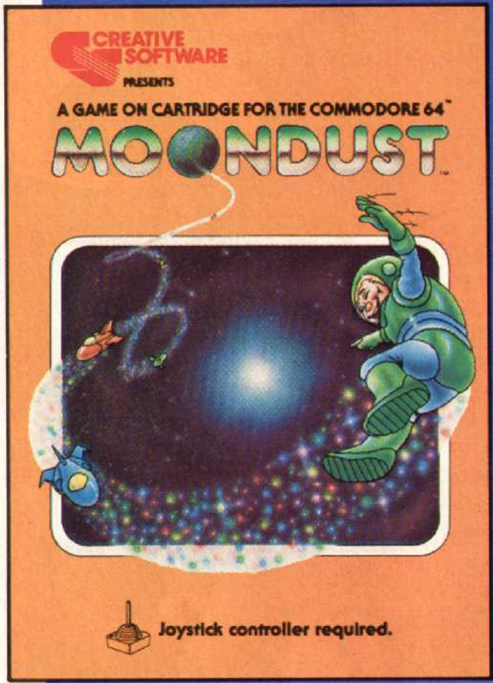
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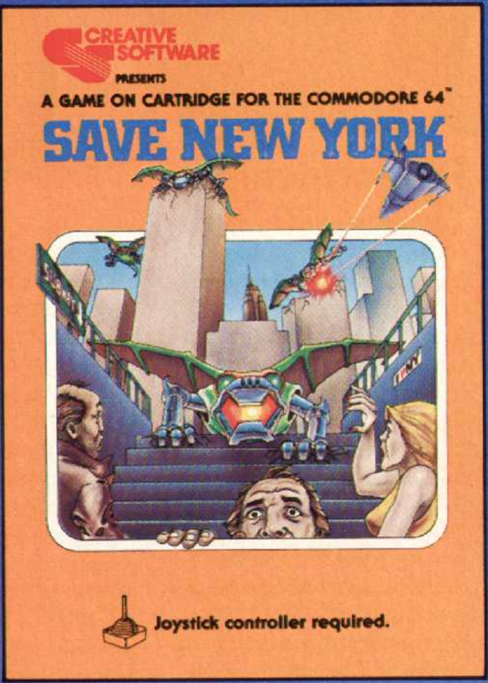
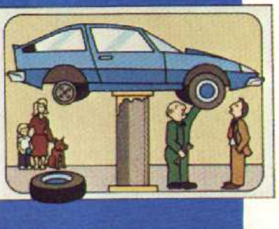
PRESENTS
A GAME ON CARTRIDGE FOR THE COMMODORE 64™
MOONDUST™
Joystick controller required.


CREATIVE SOFTWARE
PRESENTS
A GAME ON CARTRIDGE FOR THE COMMODORE 64™
SAVE NEW YORK
Joystick controller required.

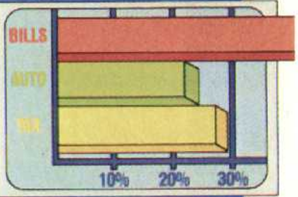
CAR COSTS
A HOME APPLICATION PROGRAM



LOAN ANALYZER
A HOME APPLICATION PROGRAM

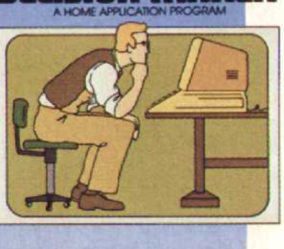
LOAN AGREEMENT
18%

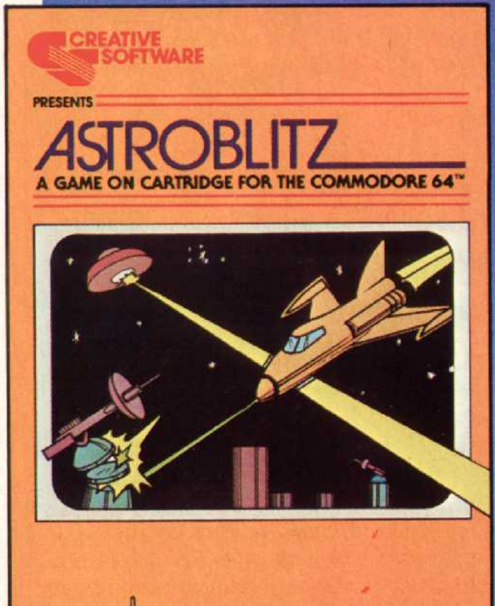
HOUSEHOLD FINANCE
A HOME APPLICATION PROGRAM


BILLS
AUTO
10%
20%
30%

HOME INVENTORY
A HOME APPLICATION PROGRAM

DECISION MAKER
A HOME APPLICATION PROGRAM

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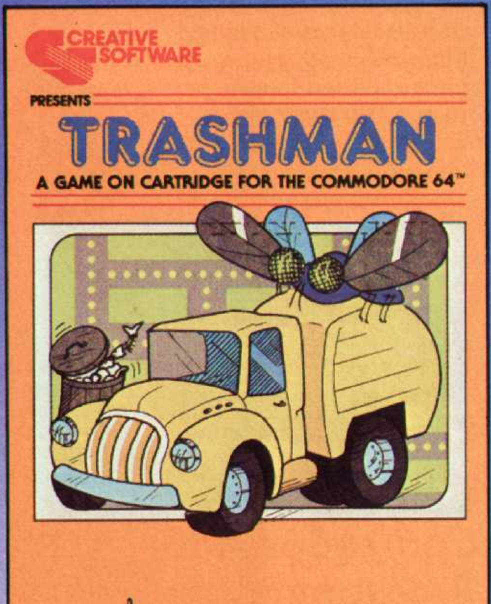
ASTROBLITZ
A GAME ON CARTRIDGE FOR THE COMMODORE 64™
Joystick controller required.

THIS GAME IS ALSO AVAILABLE FOR THE VIC-20.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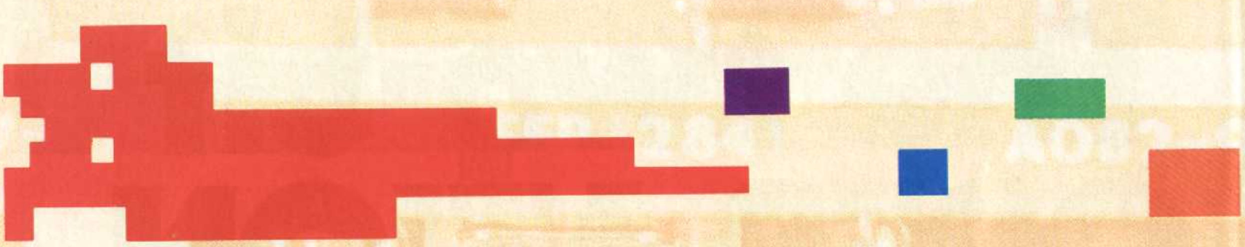
The two-bit OPERATION

Making arcade games change their dots

By Randi Hacker

Nothing is certain, it's said, but death and taxes. In the video arcade, nothing is certain but death, and the steps leading up to that eventual demise at the hands of alien spaceship or gluttonous ghost are getting less and less certain all the time. Why? Because arcade operators all over the country are taking advantage of a few switches hidden in the back of the machines—switches that can change your life by hastening your death.

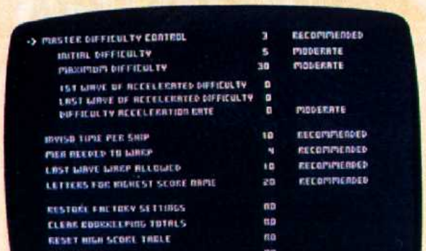
A few minor adjustments and you're denied a bonus ship at 10,000 points. Flip a lever here and your laser blasts are slightly slower. It's all done to drive you nuts . . . and to get you killed even faster so the next victim can feed his quarter into the hungry machine. (Those machines are insatiable.) So while death and taxes may both be certain, taxes might be the cheaper way to go.



You're playing *Stargate*. *Stargate* is your game. You know every quirk, every turn, every move and when to make it. You're a champ but today seems to be an off-day. You're on your last ship. The situation is tense. You're tense, but you know you simply have to get in one more good shot in order to earn a bonus ship at 10,000 points. You take aim, blast the enemy and relax. Oddly, 10,000 comes and goes with no reinforcements in sight. Is everyone at Starbase asleep or what? You watch in astonishment as you are wiped out just like that. Game over. All you can think is "What happened?"

The arcade operator changed the game, that's what happened. Arcade operators can do that, you know. And what's more they sometimes use these tricks of the trade to turn a game you were on very intimate terms with into a total stranger. Yes, arcade operators have more than just tokens up their sleeves. They can make games more difficult. They can make games easier. They can even make games behave in uncharacteristic ways and do whatever they want them to do. Unsettling, isn't it?

The mazes in *Pac-Man* can be changed altogether. The number of ships you begin with in *Defender* can vary. The number of points you must accumulate before earning a bonus ship can be set at 5,000, 10,000 or even a very discouraging 20,000. Difficulty levels can be manipulated. The number of bases in a game like *Space Invaders* can be set at three, four or five. And any combination of the above can be put together as well.



```
-> MASTER DIFFICULTY CONTROL              3    RECOMMENDED
     INITIAL DIFFICULTY                   5    MODERATE
     MAXIMUM DIFFICULTY                   30   MODERATE

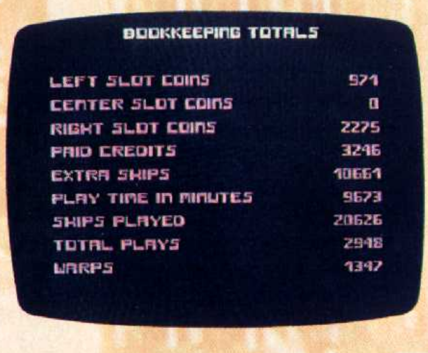
     1ST WAVE OF ACCELERATED DIFFICULTY   0
     LAST WAVE OF ACCELERATED DIFFICULTY  0
     DIFFICULTY ACCELERATION RATE         0    MODERATE

   INVISO TIME PER SHIP                   10   RECOMMENDED
   MEN NEEDED TO WARP                     4    RECOMMENDED
   LAST WAVE WARP ALLOWED                 10   RECOMMENDED
   LETTERS FOR HIGHEST SCORE NAME         20   RECOMMENDED

   RESTORE FACTORY SETTINGS               NO
   CLEAR BOOKKEEPING TOTALS               NO
   RESET HIGH SCORE TABLE                 NO
   AUTO CYCLE                             NO
   SET ATTRACT MODE MESSAGE               NO
   SET HIGHEST SCORE NAME                 NO
```

Messing Around

How is this all done? By tampering with the internal workings of the machine, that's how. Basically, an arcade machine is composed of three parts: (1) the power supply, (2) the monitor and (3) the logic board. Fooling with the power supply is not terribly constructive and will generally result in turning the machine off. And there's very little to fool with when it comes to the monitor. This leaves the logic board, which contains both the programming circuitry and a number of cunning little devices known as dipswitches. Every action in a game is based on the binary code—that is, either 1 or 0. The 1 means a signal is being transmitted; the 0 means no signal goes out. Dipswitches control these signals. They can be set in one of two positions—either "on" or "off." The pattern of "ons" and "offs" determines the difficulty levels, the number of ships, etc.



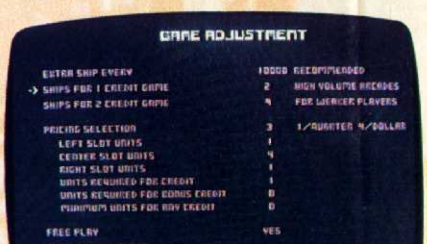
```
        BOOKKEEPING TOTALS

LEFT SLOT COINS               571
CENTER SLOT COINS               0
RIGHT SLOT COINS             2275
PAID CREDITS                 3246
EXTRA SHIPS                 10661
PLAY TIME IN MINUTES         9673
SHIPS PLAYED                20626
TOTAL PLAYS                  2948
WARPS                        1347
```

ONE, TWO, THREE, DIP! The dipswitches in PAC-MAN, facing page, can be set to speed up the ghosts and slow down Pac-Man, or vice versa. STARGATE tells the arcade owner everything (this page) and he can make adjustments without even opening the machine.

An arcade operator can open the back of a given machine and fiddle around with these dipswitches and, in this way, modify how the game plays. For example, by flipping a dipswitch or two, the difficulty level on, say, *Robotron*, can be set anywhere from 1 through 9 or 10.

Some of the newer machines don't require the removal of any back panels. The capacity to make changes is built directly into the machine and the only thing arcade operators have to do is call the menu—the list of changes available to them—up to the screen and by manipulating the joysticks and assorted buttons they can choose the settings they want. If they like to do things the hard way, they can also play with the dipswitches but in a game like *Stargate*, it isn't necessary. Modifications can be made in every facet of the game, from what the attract mode says to difficulty levels. Even the type of currency the machine will accept can be changed—from American quarters to Italian lira to Japanese yen. *Stargate* is one of these newer games which can be altered using the joystick (see sidebar).



```
                  GAME ADJUSTMENT

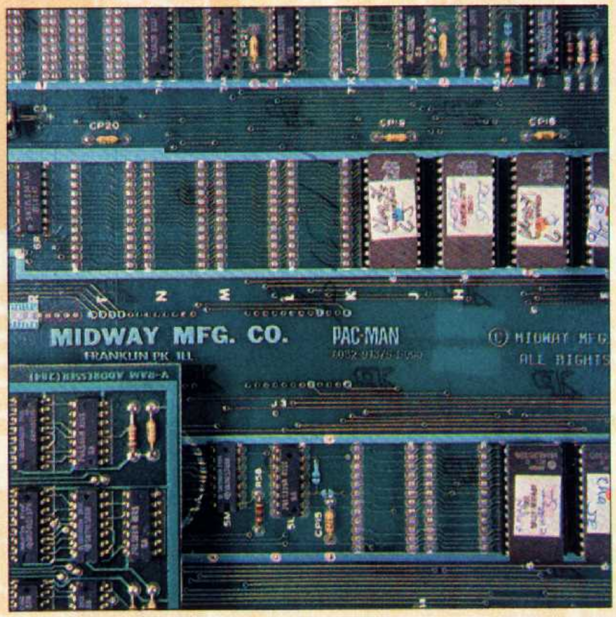
   EXTRA SHIP EVERY                   10000 RECOMMENDED
-> SHIPS FOR 1 CREDIT GAME            2     HIGH VOLUME ARCADES
   SHIPS FOR 2 CREDIT GAME            4     FOR WEAKER PLAYERS

   PRICING SELECTION                  3     1/QUARTER 4/DOLLAR
     LEFT SLOT UNITS                  1
     CENTER SLOT UNITS                4
     RIGHT SLOT UNITS                 1
     UNITS REQUIRED FOR CREDIT        1
     UNITS REQUIRED FOR BONUS CREDIT  0
     MINIMUM UNITS FOR ANY CREDIT     0

   FREE PLAY                          YES
   MORE ADJUSTMENTS

          USE UP-DOWN LEVER TO SELECT ADJUSTMENT
          USE THRUST AND FIRE TO CHANGE THE VALUE

                 PRESS ADVANCE TO EXIT
```



Of course, some arcade operators aren't content just flipping dipswitches. They want to make changes that are even more drastic. In this case, they have to change the programming chips or circuit design. This is done on the logic board. Just what is the logic board? It's the heart of the machine, the board that contains the circuits that control all of the action and play.

Fooling with the logic board is not as easy as turning a dipswitch on and off, and only a real technician can do it. But the rewards of monkeying around with the heart of the game are worth it. The game can be changed almost entirely.

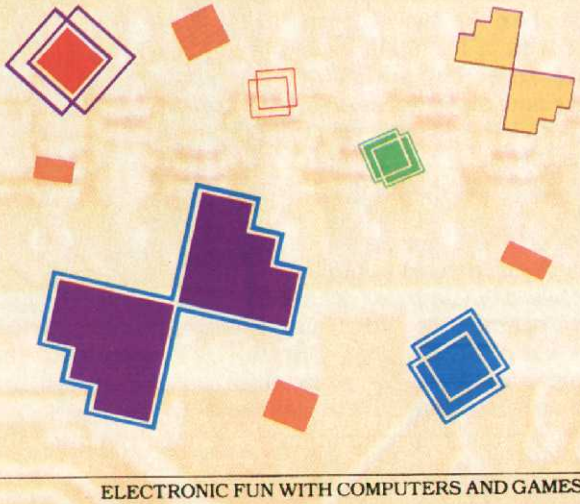
For example, there's the timing circuit which controls the speed (or lack of it) at which the characters in a game move. Lifting a trace on a pin (also referred to as lifting a leg on an integrated circuit chip), can greatly reduce or greatly increase a character's speed. Take *Pac-Man*. Lifting pin 10 on IC chip 74LS74 will result in a hyperactive dot—one that moves very quickly. Speeded up action can also be accomplished by lifting traces on the game *Asteroids*.

Most arcade games arrive at the arcade having been preset at the factory. What this means is that they are set at predetermined levels prior to being shipped. According to Frank "The Crank" Seninsky, president of Alpha-Omega Sales in New Jersey, a distributor of arcade machines, these settings are generally pretty accurate—not so easy that they cause instant boredom, but not so hard that a player will give up in disgust after the first try. Just because games start off this way doesn't necessarily mean that they stay this way. A crafty operator will change the games so that they attract the most players. He can make a harder game easier and an easier game harder. In fact, games can be made so difficult that you don't have a chance. The instant your man appears on the screen, it is demolished before you can say "hyperspace." For this reason, when an arcade operator decides to increase the difficulty levels, he does it cautiously. After all, he isn't really a sadistic monster who wants to see you humiliated in front of your friends.

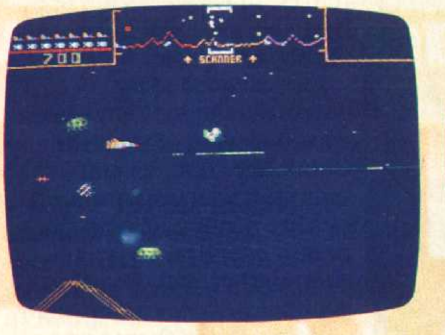
Pac-Man was a very easy game to master—simple controls and an easy-to-understand objective. This was one of the things that gave it such mass appeal. At the same time, this was also a threat to its popularity. Arcaders are a heartless bunch. Once they've mastered a game, they think nothing of abandoning it to move on to bigger things; to conquer another unknown. To prevent this from happening, Midway packages something called a Pac-Man Plus Kit. That, says Frank the Crank, is an enhancement kit which enables arcade operators to make authorized changes in the maze configurations after the first screen. This is done to woo back players who have become disenchanted with the game. Changes offer them an opportunity to memorize and defeat completely new mazes. In short, it's almost as if you were playing a totally new game.

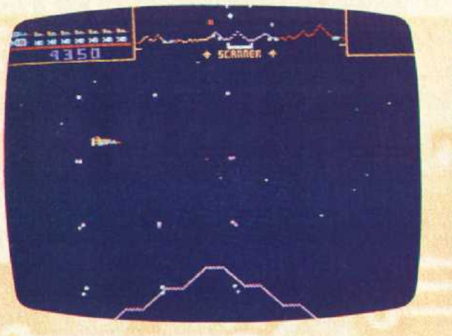
Like all good ideas, enhancement kits have been copied illegally. Frank the Crank says that several unauthorized enhancement kits are floating around that permit operators to make games other than *Pac-Man* do whatever they want them to do by giving them access to and enabling them to change the program chips, among other things. If, let's say, you come across a *Ms. Pac-Man* game that contains different maze configurations than the ones you've grown to love and hate—ones you've never seen or played on any other *Ms. Pac-Man* game—you can bet that it's been tampered with illegally.

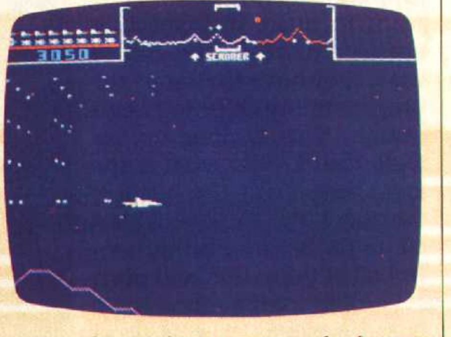
Other changes can be made by arcade operators that have nothing whatever to do with game play. The colors, for example, can be altered. This is generally done not to fool you into thinking it's a new improved version of the game, but because colors fade. The earth's magnetic field causes the colors to lose their original brightness over a period of time. When this occurs, arcade operators resort to a process called degausing (pronounced de-gousing) which counteracts the effects of the earth, realigns the magnetic field and restores the colors. □



STARGATE: What the doctor ordered





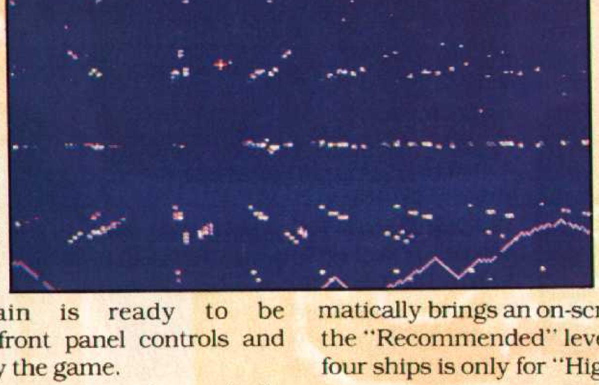


If you think you've never run into a doctored arcade machine before, or are hoping you never will, forget it. Games like Williams' *Stargate* are the coming thing in adjustable arcade machines—and *Stargate* is so easy to change, it'll be a wonder if, in the future, you'll be able to find a single arcade game that plays exactly the same way from one day to the next.

Stargate aside, with 99 percent of the machines out there right now, making one or two simple changes in game play is about as easy as performing open-heart surgery while locked inside a dark broom closet.

For arcade operators, the main problem is those little dipswitches. They control the game variables, and aside from not being very flexible, they're tiny. Eight of them all lined up in a plastic switch box makes a component just over an inch long and half an inch wide. The switchbox is usually located in some obscure corner of a printed-circuit board, surrounded by dozens of similar-looking components—and then the whole thing is, more often than not, buried deep inside the lightless game cabinet.

To change just the number of ships you get for a quarter, the operator or his mechanic has to turn off the machine, take it out of the arcade lineup, turn it around and remove the back cover, and then crawl half into the cabinet while armed with a flashlight and a screwdriver. Once he has located the dipswitch box, he has to crouch there with a flashlight in one hand while he pushes the appropriate dipswitches on and off with the point of the screwdriver.



Stargate eliminates all this hassle by getting rid of the dipswitches. Instead, the operator just presses a couple of normal-sized buttons locked away behind the coin slot, and—*voila!*—*Stargate*'s brain is ready to be reprogrammed via the same front panel controls and video screen that you use to play the game.

Because this reprogramming is all done electronically instead of mechanically, the ability to control almost every detail of the game is literally at the operator's fingertips. Pressing one of those hidden coin-slot buttons twice calls up a "Game Adjustment" screen that lets the operator fine-tune no less than 28 game functions. Once in this adjustment mode, the operator selects the variations he wants with a few movements of the joystick and by pressing the fire button—adjusting everything from how many points you have to score to get an extra ship (including one variation where you'll get no extra ships at all) to how many letters there can be in the highest-score signature.

The sheer number of the *Stargate* variations is almost too big to list here. There are, naturally, adjustments for how many ships you'll get for one quarter (anywhere from one to 20) and for two quarters (from no two-credit game at all to 50). But there is also a 99-level "Master Difficulty Control" that automatically sets the difficulty of the game at the beginning, the ultimate difficulty level it can reach, and when and how fast it will attain that top difficulty. Then there's an "Inviso" control that adjusts the shield time of your ship in tenth-of-a-second increments from a high of two to a low of .05 seconds. Still other items on the "Game Adjustment" screen's menu can practically eliminate the game's bonus-scoring features by forcing you to rescue as many as nine humanoids before you can warp ahead to a higher wave, or barring you from doing any warping at all after the very first wave.

The menu even tells the arcade operator which settings are the best for his type of customer. While he can easily set the number of ships for a two-credit game at 50, setting it at seven ships automatically brings an on-screen announcement that this is the "Recommended" level. Nine is "For weaker players"; four ships is only for "High-volume arcades."

—William Michael Brown.

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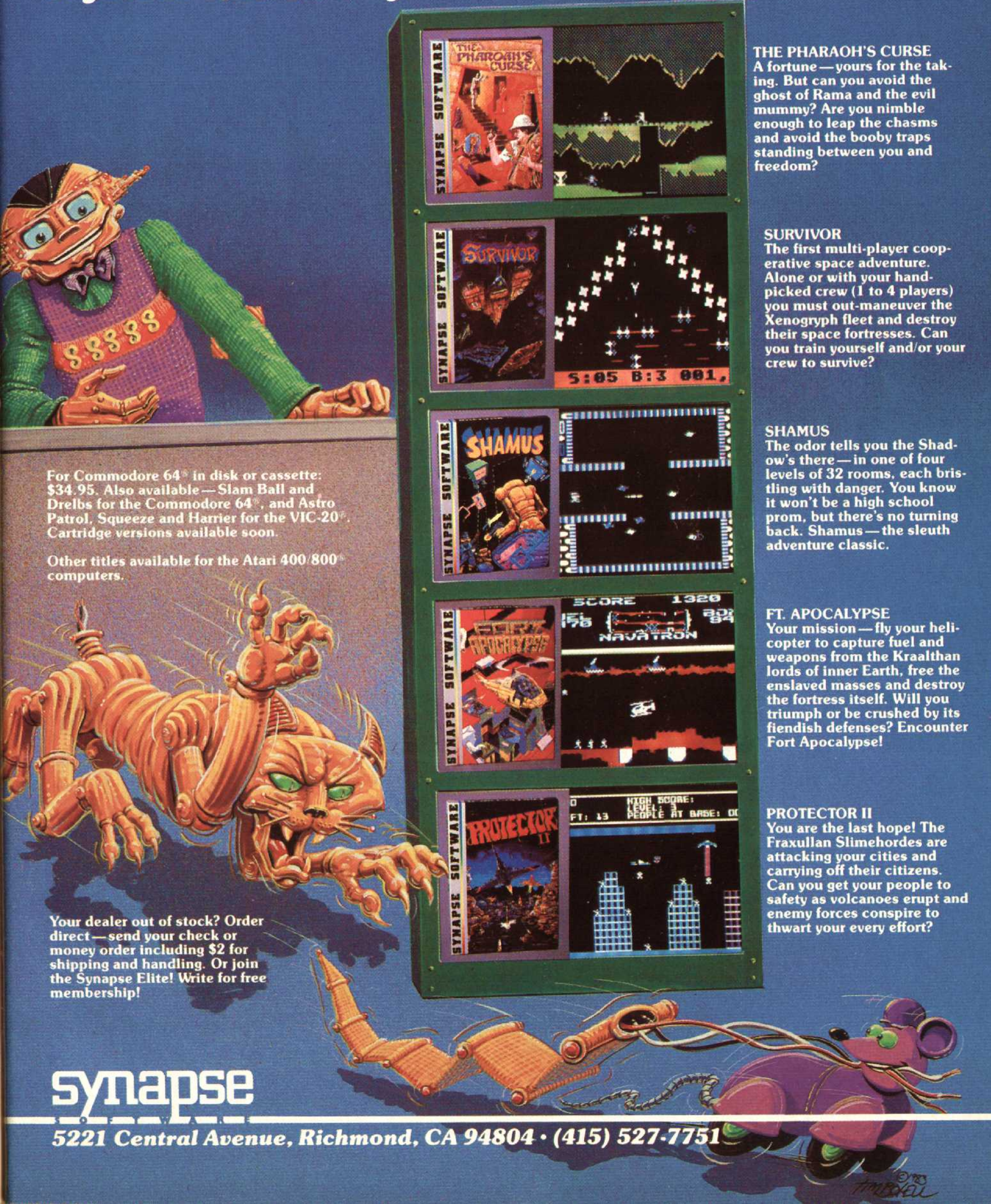

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Keyboard BYPASS

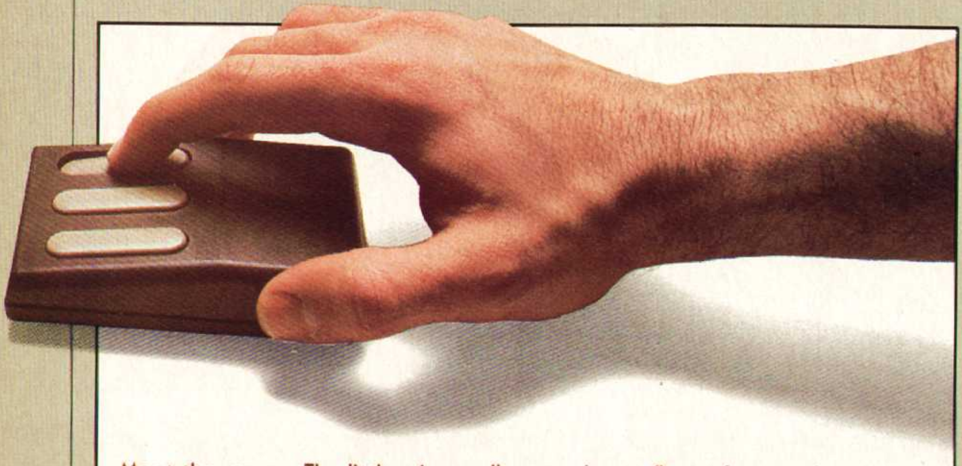
ATARI 400
SYSTEM RESET
OPTION
SELECT
START

You can talk to your computer without typing

We've all had one of those days. You get home from school or the office, slam the door, go straight to your room (after a short detour to the refrigerator), slam the door again, and slump into a chair. Then you project evil vibes toward anyone foolish enough to venture within ten feet. This is a typical example of non-verbal communication. Without saying a word, you've told your family that you're feeling slightly out of sorts.

Chances are if you're in this sort of mood you might want to tell your computer where to GOTO, too. Unfortunately you'd have to break your silence and keyboard some unprintable commands into the machine. Well, sulkers of the world, your day may be dawning.

Photos: DeWayne Dalrymple



Meet the mouse. The little critter rolls around on a flat surface, and your cursor, or ship, or whatever you have on the screen follows its movements. This mouse is from a company called Mouse House.

By Marc Berman

The era of nonverbal communication with your computer has arrived. Although it's too soon to take that keyboard and shove it, alternatives are at hand.

Now available at reasonable cost are such devices as the light pen, which allows you to "draw" directly on your TV screen; the graphics tablet, kind of a computerized Etch-a-Sketch and the mouse, which can only be described as a remote control doohickey. In the not too distant future your computer will respond to your voice commands, and will probably give you backtalk as well. At Disney's Epcot Center in Florida you can talk to a computer simply by touching the screen with your hand—something that can frequently get you into trouble with humans.

Better Than A Keyboard?

Are these new systems any better than a keyboard, or just different? According to Steve Kirsch, who runs Mouse Systems Corporation, "You still need the keyboard to generate text. But you can move things around and delete or transpose words with the mouse." Kirsch does point out, however, what he considers one very big advantage for the little critter—it brings joy to frustrated joystickers. "You can use a mouse with more speed, precision and accuracy than a joystick," he says. "In a game like *Missile Command*, I can move the cursor much faster and with far more deadly effect."

Yes, but what *is* a mouse? It doesn't look like the animal, but it *does* look like one of those windup mice that run around in circles on little wheels. You hook the mouse into an RS232 port or a joystick port, depending on the model. Equipped with either wheels or ball bearings, the palm-sized mouse is moved around a flat surface, and these movements are duplicated by the cursor on the screen. Some mice also come equipped with buttons which let you activate functions or make multiple choice selections from different alternatives displayed on your screen.

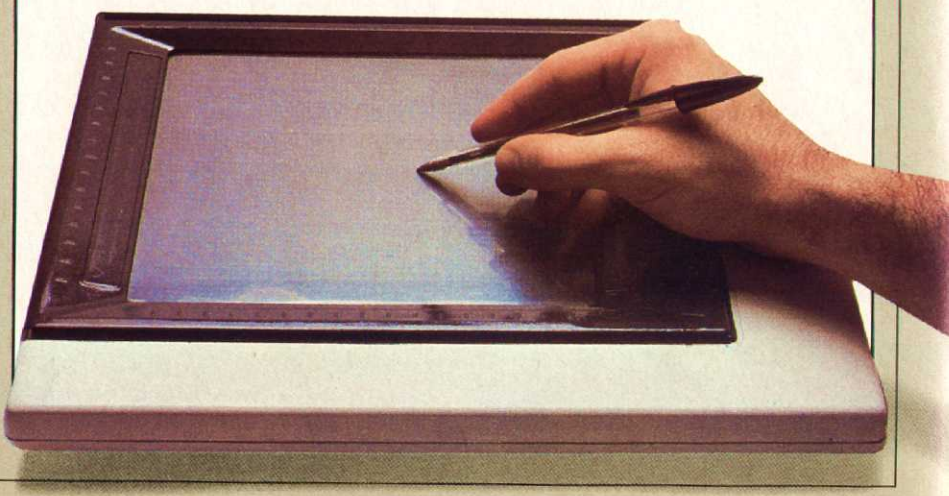
Interface Needed

But a mouse in the house may not be worth two joysticks in the hand. The biggest problem so far is that the popular home computers like the Apple II or TRS80 need expensive interfaces to make the mouse work. "If you push the mouse too fast, it will gobble up a small computer's processor capacity, unless you have the right peripheral," says Jack Hawley, owner of Mouse House, another mouse maker. Until recently, companies like Mouse House and Mouse Systems have sold most of their rodents to business users for the more powerful IBM and Xerox computers.

Another limitation, albeit a small one, is that it is difficult to draw freehand with a mouse because it has fixed X and Y axes. If you indicate points on the screen, the mouse can "follow the dots" between them, or you can draw continuous curves, so long as you're careful not to rotate the mouse while drawing.

With the necessary interfaces, mouse prices range from around

The graphics tablet, like this one from SpectraVideo, enables you to draw on your computer screen by drawing on the tablet. It's got electronic sensors that transfer your lines to the screen. Professional computer graphics designers use tablets very similar to this one.



Say "Ah." With a light pen you don't even need a separate tablet—you can draw right on the screen, provided you have the proper software. This light pen, from Vectrex, is shown with the Atari 400 to give you an idea of how it operates. Although no one has designed a light pen for the 400 yet, it's certainly possible.

$300 to $650. That's a lot of cheese, so some companies are giving away games programs with a purchase. Logitech is offering *Centipede* and Random Access includes a jigsaw puzzle game. The user sends the cursor up to the top of the screen to fetch pieces, and then rotates them to fit them into the puzzle.

Intimate Contact

For those who crave intimate contact with the screen, nothing beats a light pen. This device gives you that E.T. feeling, providing you with a magical glowing finger of your very own.

Light pens have been used for years in education and industry, but they make nifty games controllers too, although there are many disadvantages. Not the least of these is that you must sit at point blank range of your TV set. "Another problem is that it tires your arm to hold the light pen up for too long," complains Steve Kirsch. "You also obscure the image because you have to put the light pen right on top of it, and since the glass on a monitor screen is so thick, you can't be very precise because of parallax." But if you like to doodle or sign your name on your monitor, the light pen is unparalleled. And they're a lot cheaper than mice. For instance 3C Company makes a light pen for the Apple, Pet and TRS80 which sells for $40.

Another keyboard alternative to fill the needs of your hidden artistic self is the graphics tablet. This small electronic "slate" transfers your scribblings up to your monitor. It's been especially useful to businesses and schools, where it serves as a modern day replacement to the old overhead projector. That machine had the distinct disadvantage of forcing you to draw upside down and backwards. The graphics tablet allows you to draw in any of the 16 colors, as well as store images or print them out. Any stylus can be used to draw with, but don't go too quickly or you'll get a dotted line instead of a solid one. One company that recently brought out a graphics tablet is SpectraVideo, whose unit will sell for about $130.

But the big keyboard alternative everyone is waiting for is voice recognition. In the next couple of months you'll be able to buy the first voice recognition game unit from Milton Bradley, designed to interface with the TI 99/4A. The Voice Expander, as it's called, will come with seven games that feature not only voice recognition but voice synthesis as well.

Start Talking

The first step with the Voice Expander is to program the computer to recognize your voice. The computer flashes a message on the screen to REPEAT the key phrases. In baseball, for example, these would be "first," "second," "third," etc., but you could program the company to recognize "Balboni," "Randolph," and "Nettles" if you wanted. Of course, you'd have to keep the players the same throughout the game, so if you're George Steinbrenner you might find this frustrating. Speaking the name of the position into the mike that comes with the unit accomplishes the same thing as touching the proper key on the controller—that player will fetch the ball or throw it to the position you instruct it to.

You can use the control keys instead of your voice any time you choose. This is especially handy because the Expander sometimes gets a little hard of hearing, or seems to be caught daydreaming—in general, manual commands still get a slightly quicker response. Voice recognition technology is progressing quickly, though. At IBM, one of the leaders in voice recognition research and development, the big 370 computer has a vocabulary of 1,000 words and can respond to whole paragraphs of spoken commands. It still has trouble, though, with seemingly simple words like the "and" in "ham'n'eggs."

The Milton Bradley Expander will sell for about $100, and includes a headset and mike, a 64-entry keypad and a joystick. Other games for the unit will include *Bigfoot* (a *Donkey Kong* cousin), *Superfly* (sort of a garden variety of *Asteroids*) and two space games. In addition, MB will introduce a series for children called Bright Beginnings.

Although a long way from the home screen, Bell Laboratories and Disney engineers developed an interactive information retrieval system—the WorldKey Information Service (WKIS) to provide information to visitors at Walt Disney World's Epcot Center. The screen itself is touch-sensitive, eliminating the need for a keyboard. It works by surrounding the monitor with an interlocking grid of infrared "electric eyes." When the screen is touched, sensors detect the interrupted beams and tell the company which choice has been made.

Information is stored on laser videodiscs in the form of still pictures, movies, text and data. Cursors and an animated character named Bit guide the user through the possible choices. The system can also link the user to real live Disney World attendants, with two way audio and video. There's also a game where you can design a rollercoaster. On the left side of the screen there are pieces of track which you put together. When you're done, you get a "ride."

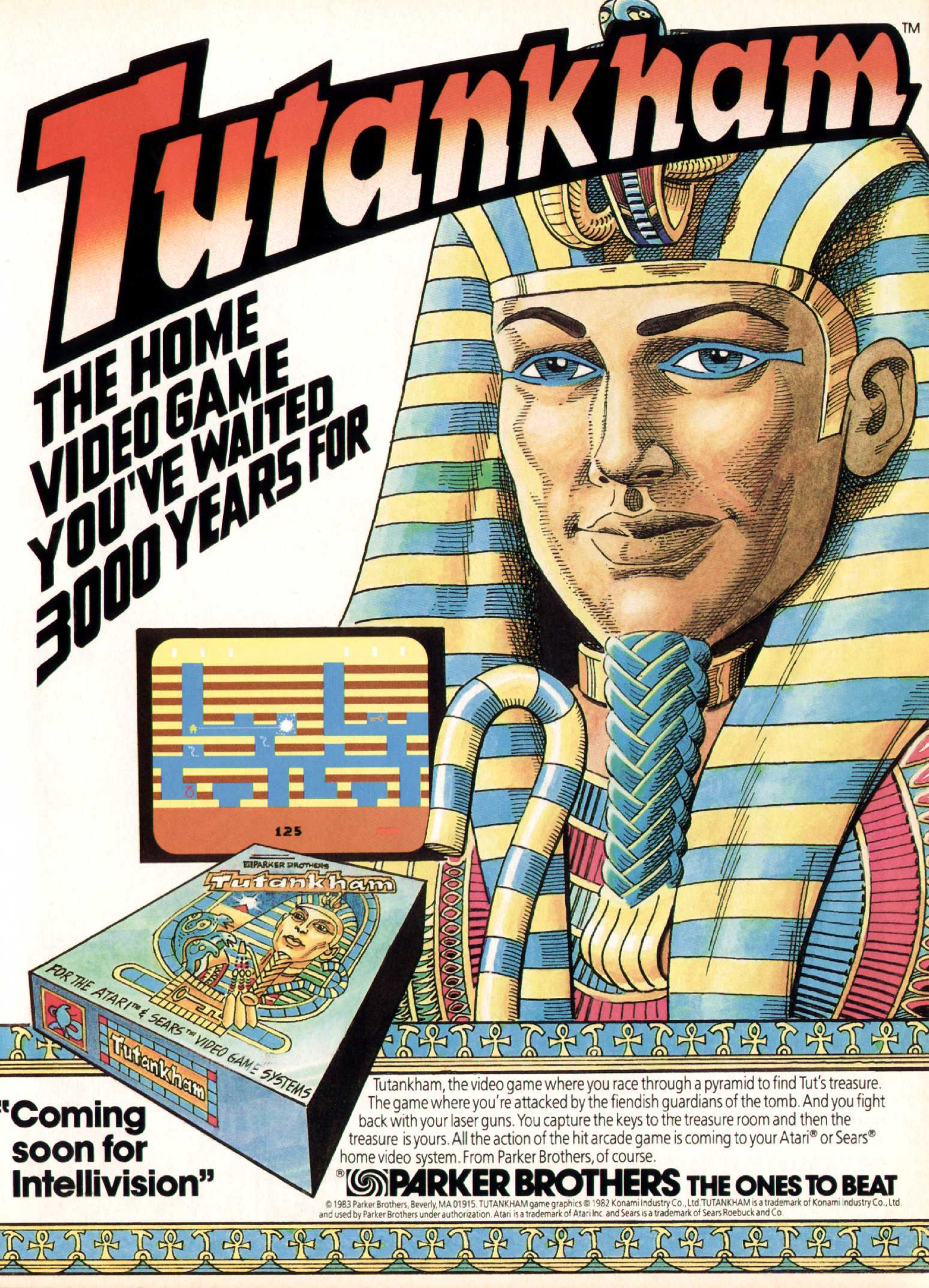
No Programming

Don't expect touch screens to take the place of keyboards. They're okay for retrieval but programming is another story.

But in addition to providing a service, WKIS has become an attraction in itself. "People are always using them," say the folks at Epcot. "Everybody wants to try them and they're designed so everyone can be successful."

Still, the venerable old keyboard is here to stay, even with a slew of other input systems. They are each fine for specific applications but, for now, the keyboard is the most versatile of all. □

Although all the keyboard alternatives have their advantages and disadvantages, the keyboard is still the most versatile way of communicating with your computer. The alternative that seems to have the most promise, though, is voice recognition, and it may not be long before it's a commonplace feature.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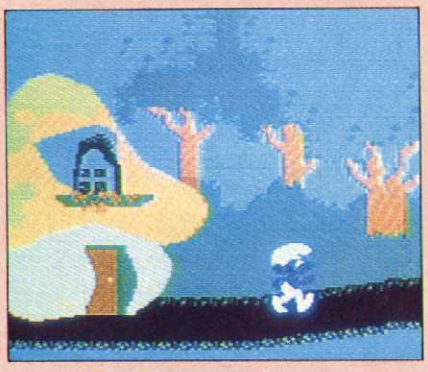
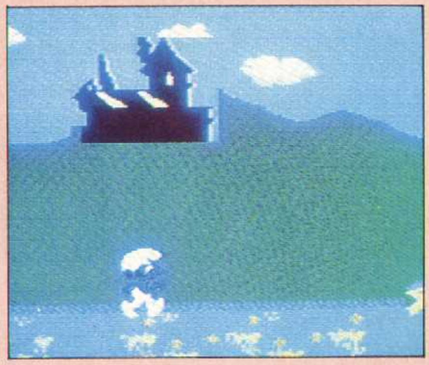
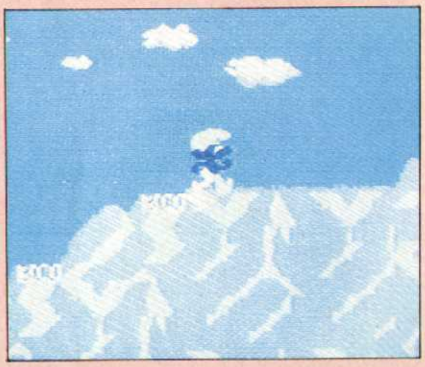
Photos: Chris Moore







By William Michael Brown

Evolution is usually a pretty slow process. Biologists say it took millions of years for the apes of prehistory to develop into today's human beings. And because it took so long—and because so much got lost along the way what with Neanderthals being so careless about their fossils and all—nobody has ever been able to discover the Missing Link.

But in the microchip universe it's a short jump from big, dumb Donkey Kong to smart little Mario. In the decade since the first Odyssey unit appeared, home video game systems have steadily grown in power—grown to the point where only one small link is missing to bridge the gap between video games and home computers.

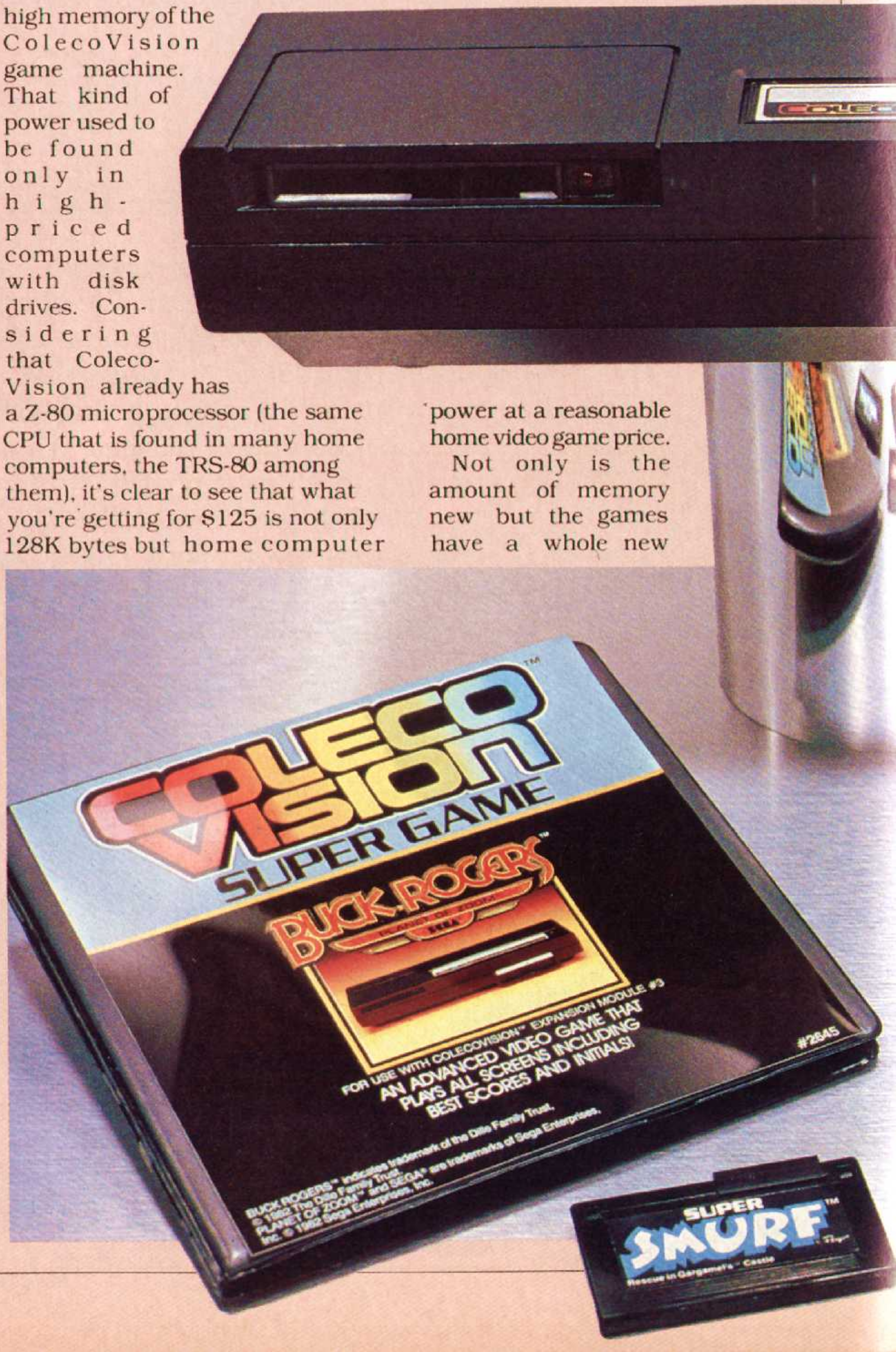
The Missing Link

For ColecoVision, that Missing Link may already be here.

It's full name is the ColecoVision Super Game Expansion Module #3—or, to make a long title short, the Super Game Module. First shown to us at the New York Toy Fair in February—and scheduled to go on sale by this fall—the plug-in module gives ColecoVision owners the most detailed, colorful, true-to-the-arcade graphics and play capabilities I've ever seen in any home game system.

Although it is called an expansion module, its enormous power justifies reviewing it as though it were a separate game system. In addition to delivering fantastic games, the Super Game Module adds one million (yes, one *million*) bits of information to the already high memory of the ColecoVision game machine. That kind of power used to be found only in high-priced computers with disk drives. Considering that ColecoVision already has a Z-80 microprocessor (the same CPU that is found in many home computers, the TRS-80 among them), it's clear to see that what you're getting for $125 is not only 128K bytes but home computer power at a reasonable home video game price.

Not only is the amount of memory new but the games have a whole new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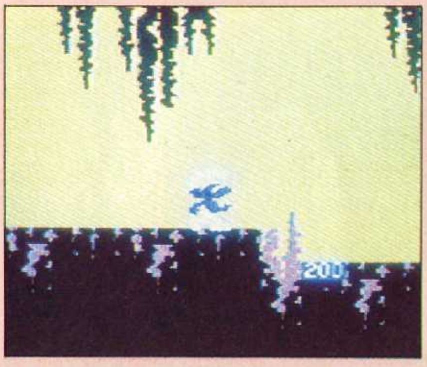
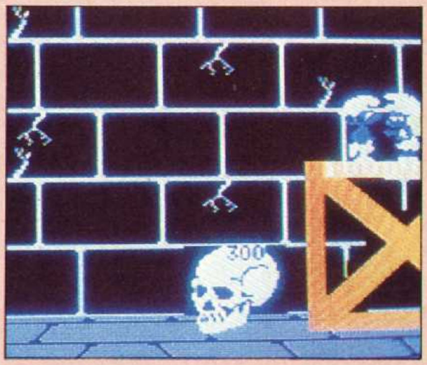
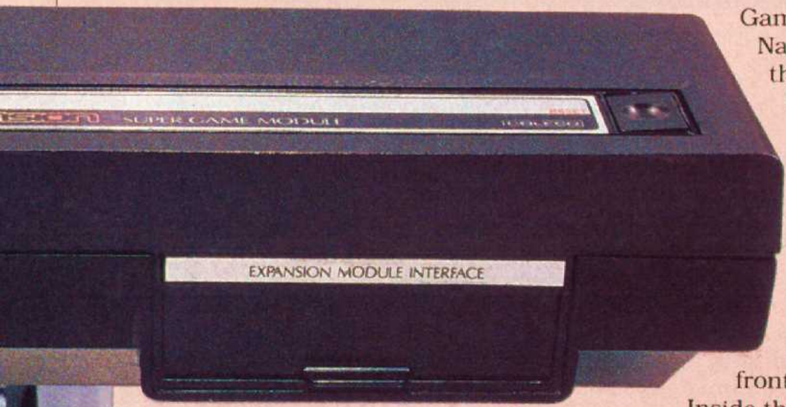




The ColecoVision Super Game Module doesn't take cartridges. It plays wafers containing super thin audio tape, but still manages to load the games about as fast as a cartridge machine. Shown here are several screens from SUPER SMURF RESCUE IN GARGAMEL'S CASTLE. Also shown on this page is the Super Game Module itself, and a look at the new packaging for the game wafers—a plastic folder about the size of a 45 record.



look as well. Instead of being standard cartridges, the Super Games are stored on mini-cassettes (which are about the length and width of a business card) called Super Game Wafers. Naturally, they don't fit into your standard cart-slot so the module has a magnetic micro-tape drive mechanism behind a slot in the front left panel. Inside the wafers is approximately 50 feet of specially formulated magnetic tape about an eighth of an inch wide. Clearly, size is not directly proportional to game play because there's more power in this tiny wafer than in any of the other cartridges currently available.

Using the Super Game Module and its wafers is less complicated than using the first module and an Atari cart. You simply plug the Super Game into the Expansion Module Interface port, push the tape wafer into the drive slot and turn the system on. You then get the usual title screen while the game is loading, followed by an extensive option menu which is selected via the keypad.

A Load Off Our Mind

Many of you who are seasoned computer users may be thinking, "But tape takes such a long time to load. Who wants to wait that long when cartridges load like that?" Well, don't worry. Although it often takes longer to load a program stored on tape than it does on, say, disk or cartridge, this problem does not occur with the wafers. Over eight hours of use on two different days, I clocked Coleco *Super Donkey Kong*, *Super Donkey Kong Jr.* and *Super Smurf Rescue in Gargamel's Castle* wafers at an average load time of only around 10 seconds. This experience leads me to believe that the wafer speed is so close to the speed of other storage media that it makes no real difference. What matters is that the tape wafer has given Coleco some of the best looking games in town.

I had access to three games at the time of this writing—*Super Donkey Kong*, *Super Donkey Kong Jr.* and *Super Smurf Rescue*. All display more detailed graphics, more varied and brilliant colors and more screens and game variations than their ColecoVision cartridge incarnations. Even the animation is

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SUPER DONKEY KONG
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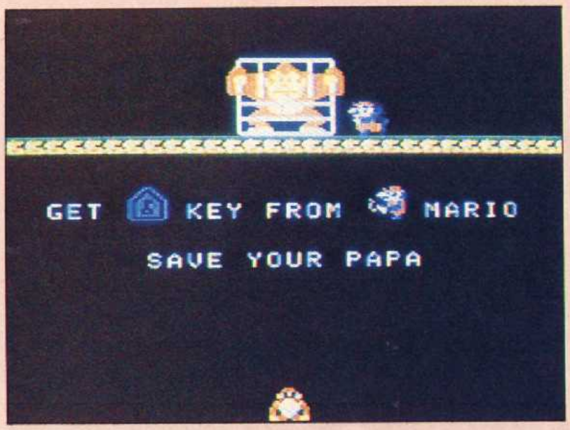
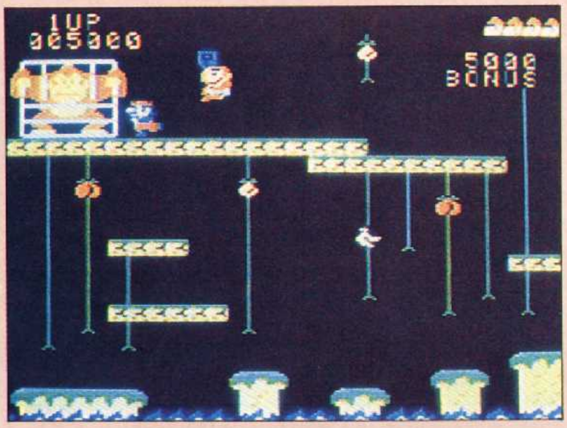
SUPER DONKEY KONG JUNIOR





more sophisticated, apparently making better use of the ColecoVision unit's multiple screen/object processing abilities. And in the two cases where there is an arcade standard to refer back to, the quality made possible by the use of wafers makes it a real challenge to find very many differences whatsoever between the two variations.

Probably the most striking differences between regular Coleco and Super Coleco are evident in *Donkey Kong*. Not only is the fourth (Conveyor) screen of the arcade game included in the wafer version, but you'll also be treated to the little introductory skit wherein Donkey Kong snatches Betsey and carries her off to his lofty perch before stamping on the girders and turning them into Ramps. The post-Rivets screen intermission in which DK takes the big dive while Betsey and Mario are re-united under a pink heart is also included, and this time the fireballs *do* jump out of the oil barrel—a touch many people found missing in the other three versions.

All of the screens feature better resolution and color drawn from a wider palette than the cartridge versions. Where the girders were simply red in the cart version, they are brick red in the wafer. The distinction may seem like a fine one but the overall impression is one of enhanced vividness, as though the game had been created *for* this system instead of adapted *to* it.

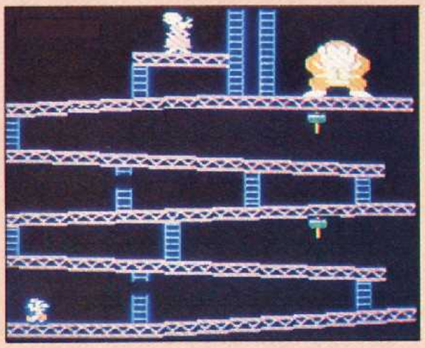
Some of the animation is still not the equal of the arcade, but the quirks in the cartridge versions at least seem to have been worked out. Mario doesn't spin and drop when bonked by a barrel as he does in the arcade game but neither can he leap off the end of a girder and bounce back unharmed, as he can in at least one of the cartridge versions I've seen.

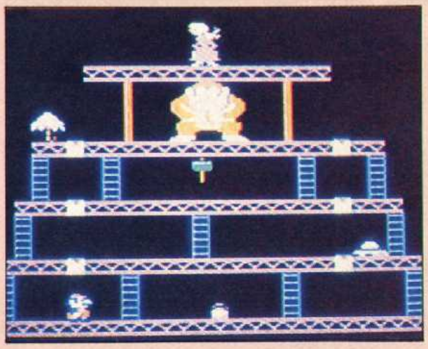
The same comments apply equally to *Super Donkey Kong Jr.* and *Super Smurf*. The Mario's Hideout intermission in the former (which was missing in the cart) is included, and it's smoothly animated right down to Mario's spinning (why he can do it in *Junior* and not in *DK* is beyond me). The greens and yellows of the first play screen are also more vivid and the Keys are not lost in a blur of blue anymore.

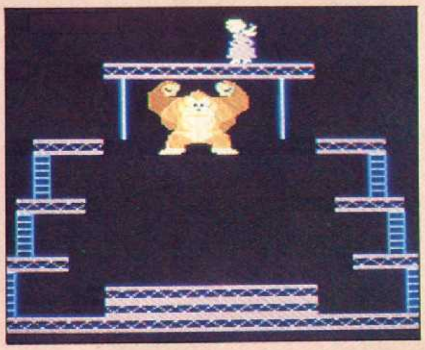
Color really comes to the fore in *Super Smurf*: The interior of Gargamel's Castle is done up in ominous purples, blacks and scarlets that, while similar to the colors of the Forest screen, really seem to be different color mixes entirely. The backgrounds are more detailed right down to the thatched roof and window of the opening screen's house, and the attacking birds in later—and more difficult—levels swoop with a viciousness that's truly frightening.

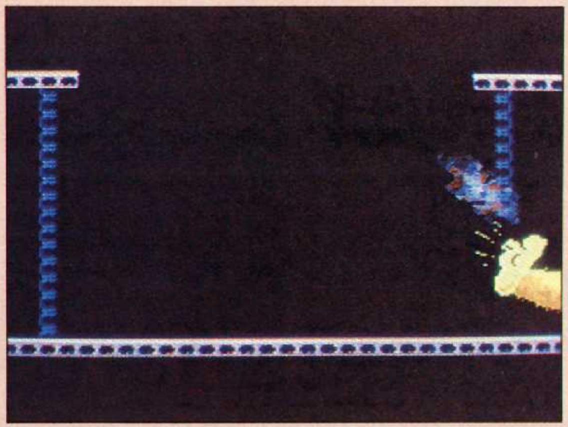
In keeping with a policy to only market games that have licensed figures or well-known names attached to them (such as Ken Uston's *Blackjack*), Coleco is planning to release some of the hottest

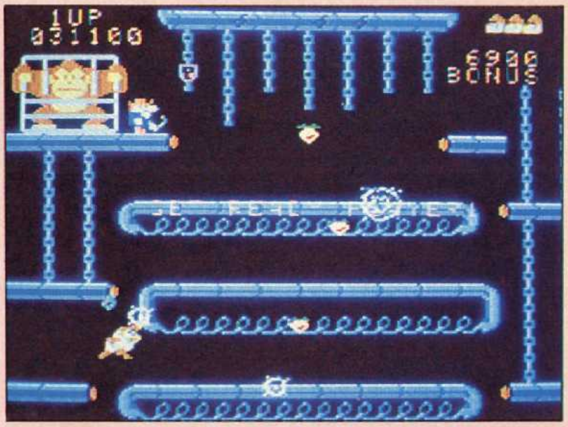
SUPER DONKEY KONG, JR. plays about as close to the arcade version as anything you can bring into your home. The missing sequences from the arcade game are restored, even though the animation isn't quite as good.











arcade titles ever for the Super Game Module. Some of the arcade games from which they will be adapted represent such sophisticated technology that reproducing them for the standard video game unit would probably have meant really compromising on both graphics and playability. With the increased capabilities of the Super Game Module, these games promise to be as exciting, complex and as brilliantly portrayed as they are in the arcades.

Five titles are planned for release on wafer so far. They are: *Zaxxon, Buck Rogers Planet of Zoom, Time Pilot, Turbo* and *Sub-Roc*. How Coleco will improve upon the already outstanding *Zaxxon* and *Turbo* remains to be seen but you can be sure that if improvements are possible, the Super Game Module has the power to make them.

Buck Rogers Planet of Zoom was a game that I thought would never translate to the home game format without sacrificing most of its sensational effects. If you've seen it, you'll understand why. The 3-D effects are astounding—you speed down a three-walled tunnel floating somewhere in one galaxy or another while all sorts of menacing alien ships come at you from the other direction. Once again, if any unit has the capability to reproduce something this sophisticated, the Super Game does. Its million bits should enable designers not only to faithfully replicate the graphics but to keep most of the game play intact as well.

Another arcade license is *Time Pilot*—analyzed by Michael Blanchet in last month's issue. This game turns you into a fighter pilot who travels through time from 1910 through 2001 battling with planes that become progressively more futuristic. As this game is a great favorite of mine, I'm very anxious to see what Coleco does with it in the home format.

Last, there's *Sub-Roc*, a game in which you are the pilot of a combination spaceship/submarine and you've got to fight enemy spaceships, seagoing ships and other nasties that rush at you from the distance. In the arcades this game requires an elaborate set of goggles that house shutters which close and open rapidly, blocking the vision first of one eye and then the other. This produces the 3-D effect. How Coleco plans to replicate this at home is still a mystery.

The END

One other arcade-type feature unique to the game wafers is the ability to enter your initials next to your score as a permanent record on the tape. The high-score chart pops up right after your last screen, along with an alphabet menu that allows you to select the letters with keypad and controller movements. You can even skip this if you want by centering your cursor on END and pressing the appropriate key three times.

One complaint: Alas, there is still no 5200-type "pause" control that allows you to pick up the game exactly where you were killed and, in this way, go through to see what all the screens look like.

At Toy Fair, Coleco did have a few wafers programmed in a

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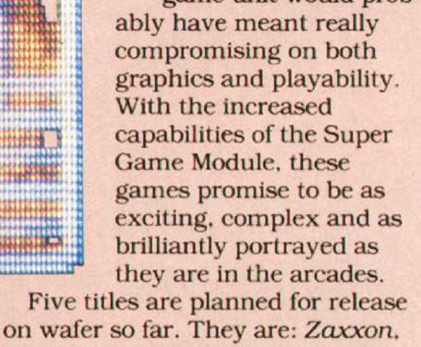
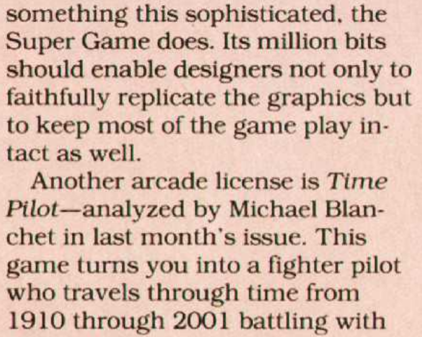
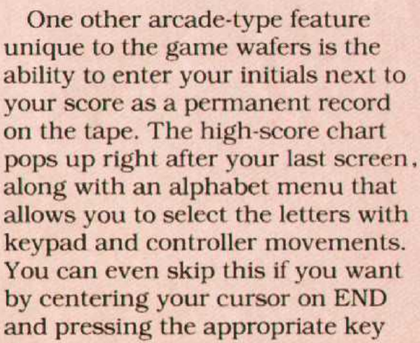






Now HEAR this...

Dr. Dolittle, you will recall, wanted to talk to the animals. That was years ago. These days, nothing will do unless we talk to something a little more sophisticated—computers. And the day isn't far off when, instead of inputting all your data through a keyboard, you'll be able to order a computer to do something verbally. And, who knows? It may talk back.

Illustration: Jane Beaulieu

Voice recognition: Computers learn to listen

By Kim Mills

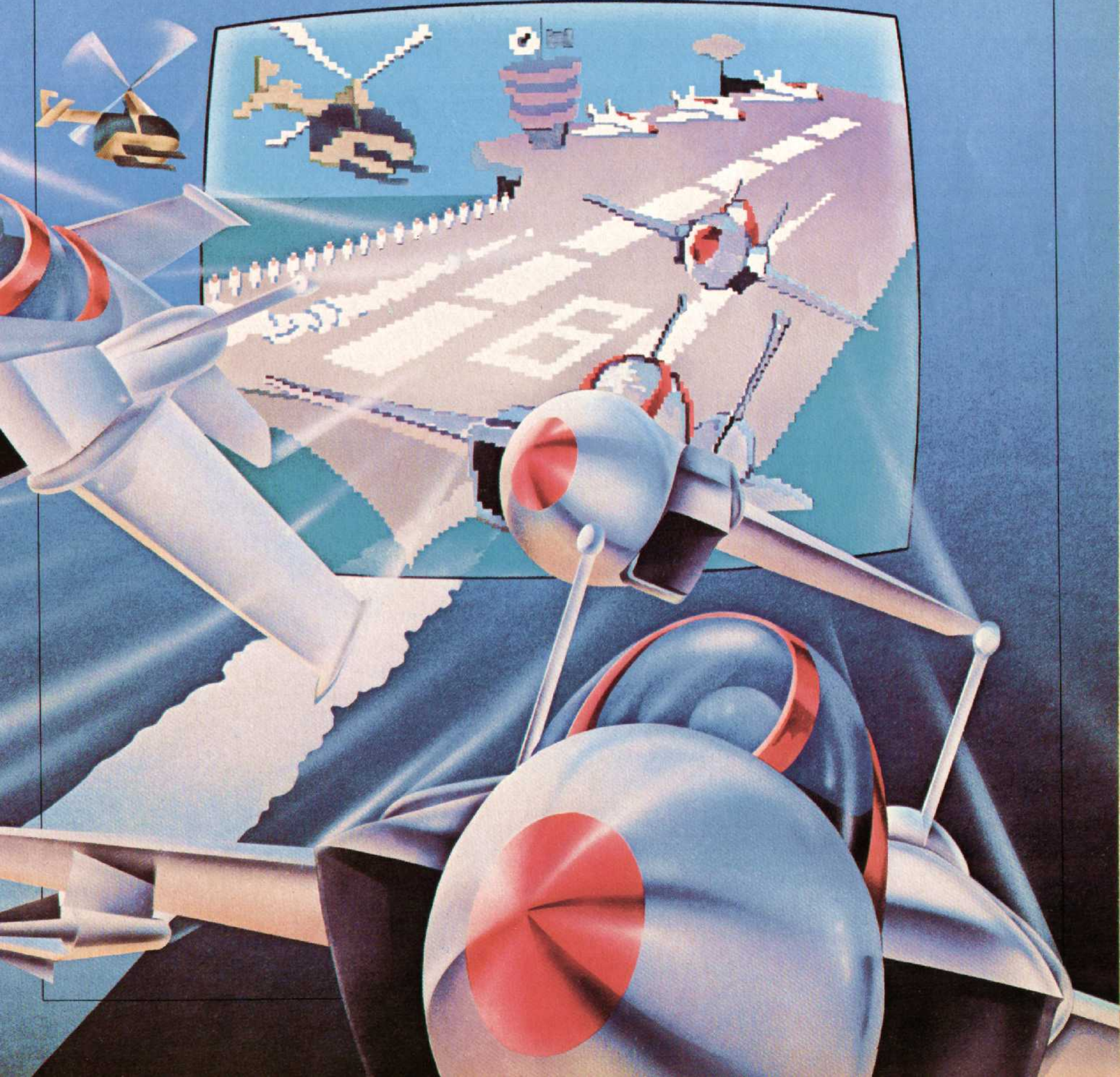
It's 7 a.m. on a typical Monday morning in Anytown, U.S.A. I.M. Bizzy says "Ciao" to his car-pool buddies in front of his John Portman-style office building-hotel-shopping mall complex—complete with atrium and non-collapsing skywalks—and rides the whisper-silent elevator to the 59th floor.

Inside his plush, climate-controlled suite of offices, colleagues are already hard at work, since flex-time has finally become a fact of business life. I.M. walks through the suite to his own snug cubicle, complete with holograms of the wife and kids, tosses his hat onto a rack behind the door (hats are back) and greets his computer.

"Good morning, Hal."

"Good morning, I.M. How was your weekend?" it asks in dulcet, unisex tones.

"Not bad, Hal. How 'bout your own? Did you finish analyzing the figures for the Abu Dhabi account?" asks I.M. as he blows imaginary dust off his mirror-clean



Microphone meets microchip

Voice recognition technology is advancing so rapidly that companies such as Interstate Electronics, manufacturers of the module shown here, claim that voice inputting is more accurate than keyboarding for a variety of applications. Interstate gives its customers a wide choice of systems, from a 40-word vocabulary to one with 1000-word capability. for "normal speakers", says Interstate, their systems are over 99 percent accurate and can save time and money for business users.

In addition, the operator is no longer chained to his or her desk, but is free to move about the office. This allows you to refer to your files as you input data. While many systems can be used right out of the box, there are others which are programmable for regional accents. Smaller voice recognition devices are being used in toys, telephones and emergency response devices. These are speaker independent and have 85 to 95 percent accuracy.

digital VT100

desk top. Not a paper or file cabinet is in sight.

"Yes, I.M., may I show them to you—or are you ready for the morning mail?"

"Oh, I guess I'll look at the mail first. And while I'm doing that, would you call Walt Wriston Jr. at Citicorp and set up a meeting for later this week?"

Iron The Wrinkles

Fantasy? Yes, but not for long, say researchers in the youthful field of computer science and linguistics. Computers are already capable of understanding language, but there are still a few wrinkles that need ironing out, enough to keep researchers busy for the next 10 to 15 years, by their own estimates.

However, those speech-recognizing computers already on the market—designed primarily for business use—can understand language with a fair degree of accuracy (as much as 95 percent in many cases).

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"The big problem is what we call speaker normalization," says Dr. Matthew Yuschik, professor of computer science and linguistics at the University of South Carolina. "What that means is when you train a computer to understand speech, you generally do it for one person and the computer has a very good pattern set up for this one person. However, you put a new person on, or even the same person with a bad cold, let's say, and all of a sudden you generate a different pattern. The computer isn't able to change its model, or what we call templates, stored in its memory."

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Besides this there are other stumbling blocks. Among these are the way in which we speak—essentially in long streams of connected gobbledygook, rather than in distinct, separate words. "When people talk, they just make a mess of it," according to Dr. Arvin Levine, manager of technology application for Four Phase Systems, a division of Motorola. "It's the equivalent of having to read a letter that had a million typos on a single page, because people say things differently when they're speaking in a continuous stream. If I just say what comes off the top of my head, the actual sound of the individual words will be drastically different than if I spoke one word at a time as though I were reading a list."

Linguists agree that language is a poorly understood human phenomenon. No one knows how it evolved, no one understands how children learn it. And just when you think you comprehend it, language changes. Computers, on the other hand, are logical, basically reliable and incapable of adapting by themselves to changes.

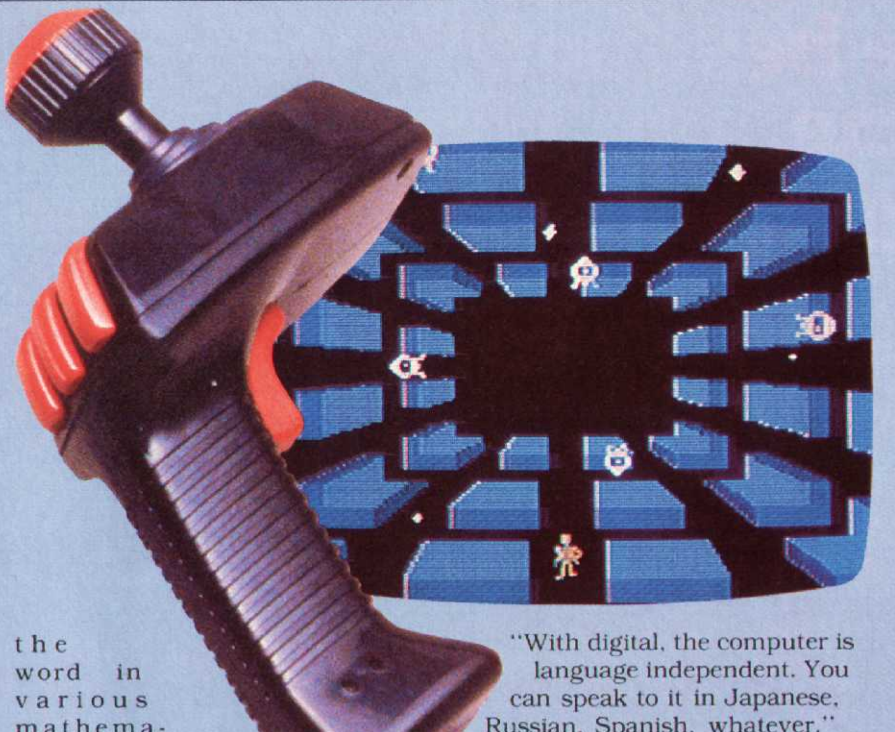
They cannot, as yet, differentiate among homonyms (words that sound the same, but mean different things, such as *dear* and *deer*) and have virtually no ability to understand context well enough to catch their own mistakes.

So given the present state of the art, computers can best recognize fairly simple language, such as commands, or they can understand limited artificial grammars that are used in restricted environments, such as for business letters or airline reservation systems.

IBM has achieved virtually total recognition with a limited language called New Raleigh, and is now working with a larger vocabulary called Laser Patent Subtext. New Raleigh consists of 250 words, while Laser contains 1,000. But, according to researcher Frederick Jelinek, vocabulary size is a poor measure of complexity. The difficulty comes with the entropy—the measure of consistency—of a language, or more simply, the probability that certain words will follow one another. The more consistent the language's word order, the easier it is for the computer to understand.

But how does a computer recognize a word?

"It looks at the sound waves that you make when you talk," explains Levine. "It looks at the loudness of



the word in various mathematical ways and picks out what it considers significant elements of the way you talk. It picks up silences or loudnesses within each word. Depending on how complex the machine is, it might have a small number, say 50, of significant points within a word. Or it might have almost 1,000."

It's Phonemenal!

Some speech recognition peripherals already on the market break words down into their smallest linguistic components, called phonemes, according to Ann Conrad, manager of marketing services for Votan, Inc., of Fremont, Calif. Votan sells a speech recognition system for $10,000 including an IBM personal computer. Others convert the sound of the voice to a series of numbers—digital signals—based on several different variables.

"Using phonemes gives robotic, unnatural-sounding speech when the computer speaks back to you and means you can only talk to the computer in English," she says. "With digital, the computer is language independent. You can speak to it in Japanese, Russian, Spanish, whatever."

Most of the products currently on the market are speaker-dependent, meaning they must be programmed to understand a particular speaker. Before the year is out Votan expects to market a speaker-independent system that will be able to understand virtually anyone who walks up to it and starts talking. That's the good news. The bad news is that its vocabulary will consist only of the numbers zero to nine and the words "yes" and "no," Conrad says.

With speaker-dependent systems, the user must sit and painstakingly train the computer to understand his speech, Levine says. He puts patterns that correspond to words into the computer's memory. "Then, when you say a word, it creates a new pattern and tries to determine which word was spoken from picking among those in its memory."

Some machines do an averaging of significant points when you program them. They will try to determine the variability likely within a specific word. Other machines make several copies of the same word to increase the chances that when the user speaks, it will be able to match the word with a copy on its list.

"There's only one problem with storing patterns," Levine says. "It takes the computer a significant amount of time to search among the patterns. You'd like the machine to respond in, say, a tenth of a second from when you stop talking. A quarter- or half-second seems like a very short time until you actually have to wait for the machine to respond and you get annoyed."

Talk Takes Time

Programming is another time-consuming aspect of the voice-recognition peripherals now on the market. Levine estimates that it takes about 20 uninterrupted minutes to teach the computer 100 different words. And if several different people wish to use the system, each has to program it to recognize his or her voice.

"If you're talking about thousands of words, then it's probably a few days of recording to get that done," Levine says. "And even then, you might mess up on a couple and have to fix them. It's

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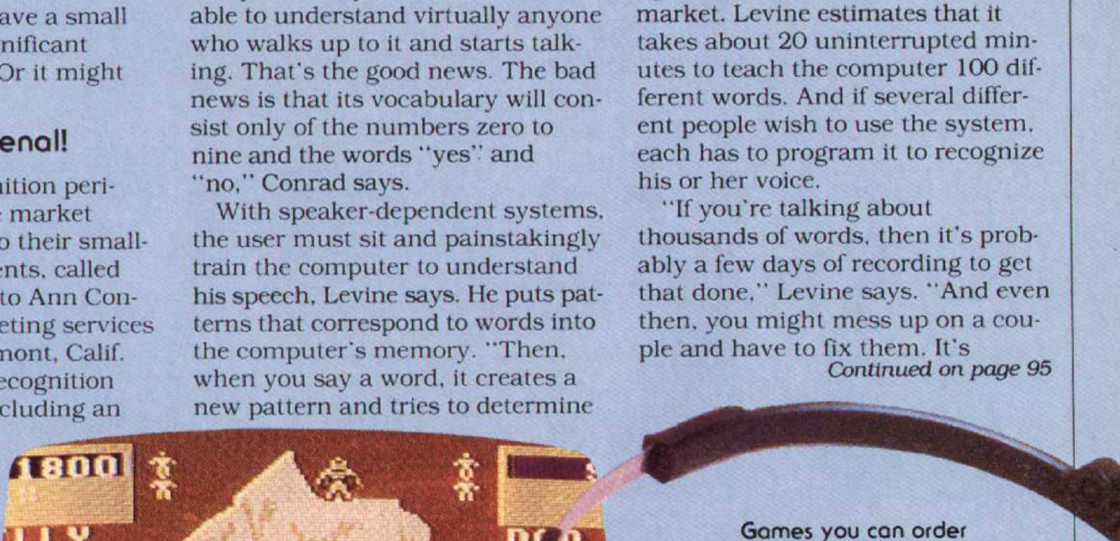
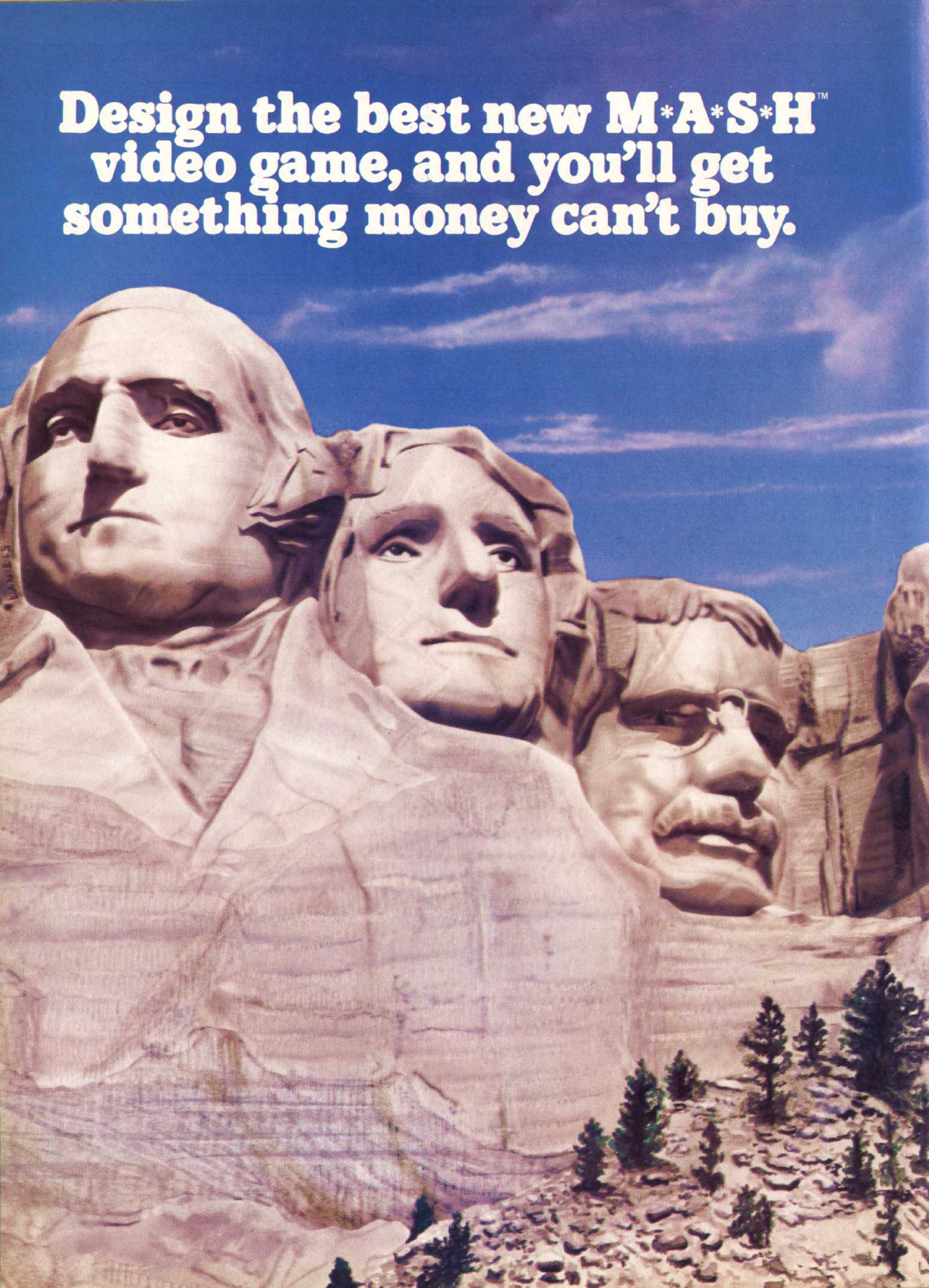


Games you can order around are not as far off as you might think. In fact, Milton Bradley has several games—including a baseball game—for the TI which take direct verbal commands.



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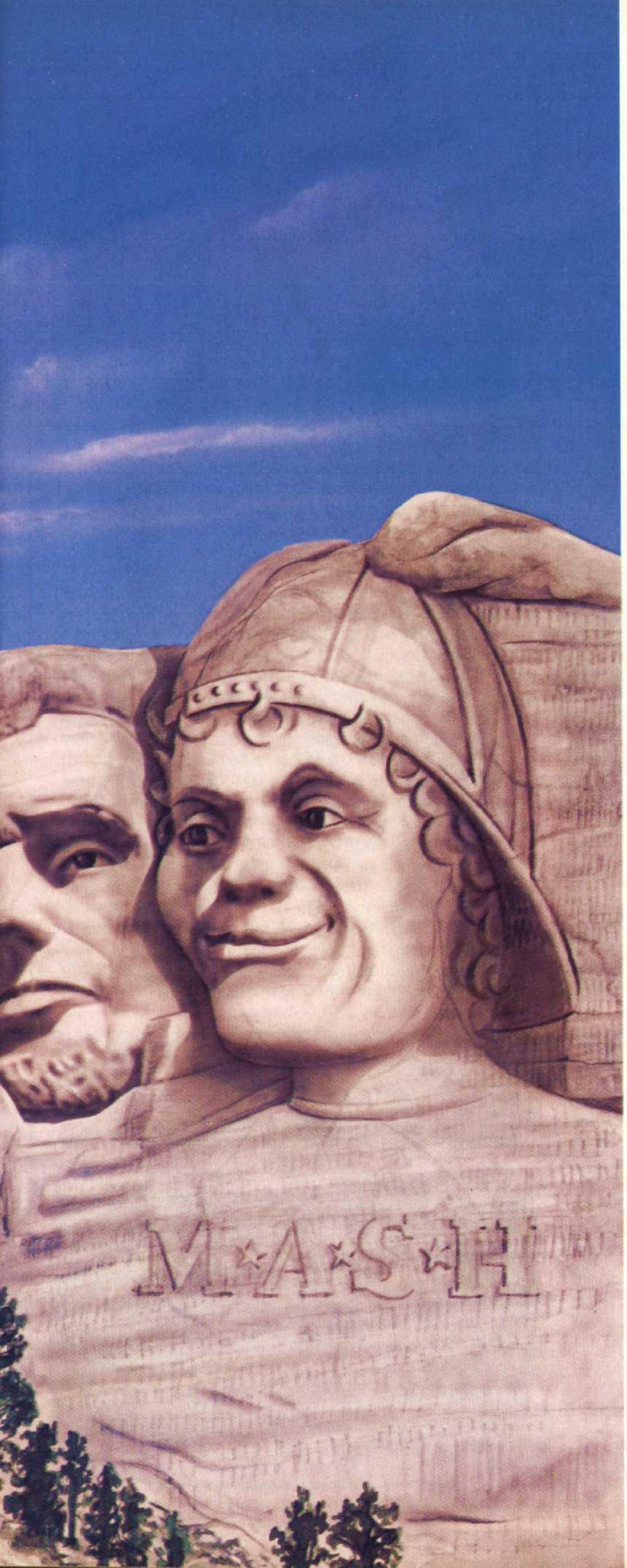

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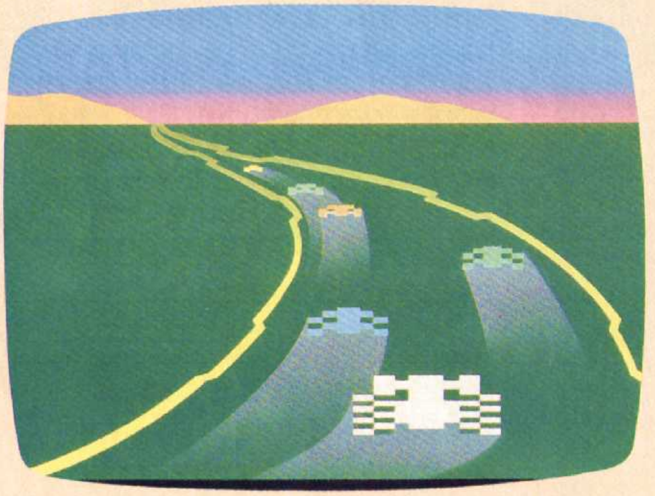
Enduro: On the road again



ENDURO

Activision/Atari VCS

By Michael Blanchet

I dislike sports games for the simple reason that they are just better when played in real life. Likewise, I shun driving games because I have a brand new sports car that's a lot more fun to drive than some vague shape on the TV screen. But after playing *Enduro*, I'm ready to alter my opinon.

Enduro gives you that behind-the-wheel feeling like no other driving game available. It's so good, I'd venture to say that it's comparable to the ColecoVision-compatible *Turbo*.

The title *Enduro* should give you a good idea of the gist of the game. This is an endurance contest. During each game "day" you must pass a specified number of computer-controlled cars. As you drive, the day will progress from sunrise to sunset.

Your instrument panel features an odometer which, in essence, is your score. The number of cars you must pass is posted directly beneath the odometer. This figure decreases with each auto you speed by.

To say that this is a tricky course would be an understatement. Unlike comparable games, such as *Turbo*, *Enduro* winds, bends and turns. The transitions between directions are remarkably smooth, too. The course doesn't just blink into a sharp turn, like *Turbo*'s.

Since you only need to adjust your lateral position on the course, the less-than-agile standard Atari joystick does not hamper play action to any great degree. In fact, I found the stick's lack of responsiveness a blessing sometimes. Your steering response increases proportionately with your speed. When under full steam, the car responds beautifully to light taps on the controller.

I was pleasantly surprised to discover that your car will not be struck from behind after being involved in an accident. This was another inconsistency in *Turbo* that was not only extremely maddening, but totally unrealistic to boot. Don't the approaching off-screen cars see that you are not moving? What are they, blind? And how come they pass right through you unscathed while your car rattles like a trash can lid and sits floundering for another five seconds?

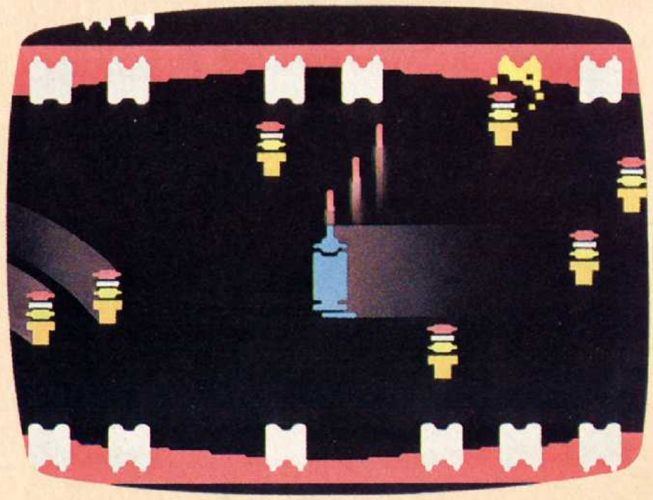
Enduro gives you credit for being a good driver, yet it doesn't over-penalize you if you're a little sloppy. Unlike other driving games, for example, you can brush against the sides of the road without automatically crashing. Doing so will, however, slow you down.

Visually, *Enduro* is a lot cruder than most Activision products. I wouldn't go so far as to say this is a low-res effort. On the contrary, it still looks sharper than a good 90 percent of the carts other companies try to pass off as "realistic looking." *Enduro* is just not as pretty looking as your average Activision game.

To keep you on your toes, *Enduro* throws in a few surprises. In one sequence, the road is blanketed with ice and snow. Extra caution is necessary since your racer skids. Just after dusk, fog shrouds the race course. Again, special care is needed here.

Although I wouldn't go so far as to trade in my car for *Enduro*, I will say that it is the best VCS-compatible driving game I've seen yet—bar none.

Don't use the brakes to slow down. Simply take your foot . . . uh, finger . . . off the accelerator (fire button).



Hits & Missiles

PLAQUE ATTACK

Activision/Atari VCS

By Michael Blanchet

I hate going to the dentist probably as much as the next guy. Yet, I can't recall ever having nightmares about the food my toothbrush missed and the unspeakable damage it was doing to my teeth. Nor did I ever awaken in a cold sweat to count my teeth and make sure none of them had disappeared while I was asleep. Whatever you think goes on in your mouth, I bet your most hideous fantasies aren't as paranoid as those depicted in *Plaque Attack*, another piece of twisted surrealism from the designer of *Megamania*, Steve Cartwright.

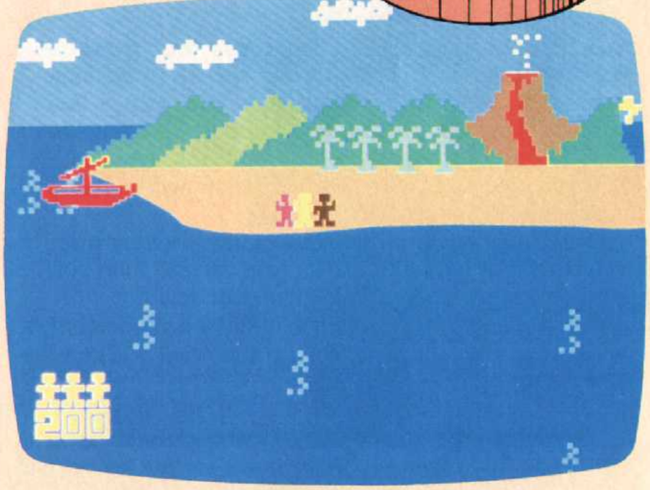
The battleground in *Plaque Attack* consists of two rows of horribly overspaced teeth. Are there no orthodontists in video gameland? Your lone defense against the waves of junk food that are out to rot your teeth away is a tube of toothpaste. Brushing your teeth was never so easy. Well, you don't actually brush them. The idea is to zap each food item before it touches any of your teeth. When contact is made between comestible and cuspid, the tooth yellows and quickly disappears.

The opposition's roster reads like the average teenager's diet—double cheeseburgers, hot dogs, fries, donuts, candy canes and ice cream cones, to name a few. You have 35 seconds to rub out each onslaught. As time passes, you'll notice that the toothpaste tube begins to shrink.

What saves the game is its incredibly lifelike graphics. Unlike *Megamania*, where the majority of menacing common household items were, for the most part, unrecognizable, each of the edible enemies in *Plaque Attack* looks just like it does in real life. The images are so detailed, colorful and true-to-life, you won't believe your eyes.

I have to admit that *Plaque Attack*'s storyline is a first in video game scenarios. As imaginative as it is, though, the game, once stripped to its basic elements, is just like any other shoot-em-up. Sure, the prevention of cavities is a noble pursuit, but it's not my idea of fun.

When there's one tooth left, position yourself directly across from it and fire at everything that comes by.

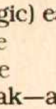


TROPICAL TROUBLES

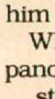
Imagic/Intellivision

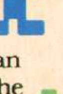
By Randi Hacker

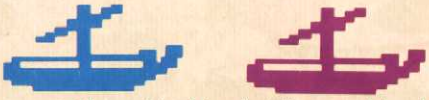
If you found *Beauty and the Beast* (from Imagic) easy to master, it might have been because you as the human being had an unfair advantage. You were fighting an ape on your home ground, so to speak—an urban setting. Not many apes we know live in apartment buildings and those that do are unable to meet the monthly rent payments. *Tropical Troubles* is the ape's revenge. You have to meet and defeat him on his home territory—a tropical island.



When the game begins you are looking at a panoramic view of the island and you see your man standing at the edge of a beach. Immediately, the scene shifts to a close-up of that beach. Horrible Hank (either an ape or the missing link) has got





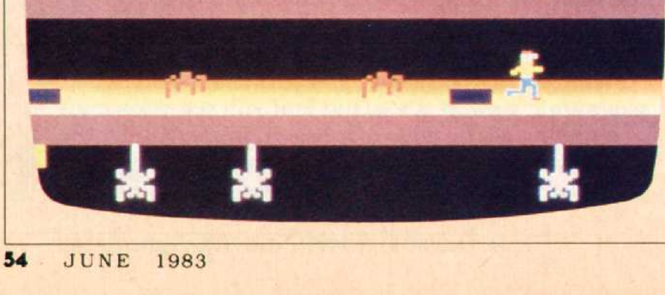


your girlfriend in his clutches and is about to run off stage-right with her. But first he gives you a good kick to let you know he means business. This lands you at the far left of the screen and gives Hank a headstart. Now you've got to get up, dust yourself off and give chase. While you run, you've got to avoid rolling boulders, a snake and a disembodied monkey's paw which wants very much to hit you on the head and knock you out. If you do catch up with the two, you merely have to touch your poor girl's feet (which are always visible at the right side of the screen) in order to advance to the next screen. Along the way, your paramour drops white handkerchiefs (of which, it should be noted, she seems to have an endless supply despite the shortage of haberdasheries on the island). If you run over one of these you are rendered, momentarily, invincible and cannot be stopped by rocks. Fists, however, are still dangerous.

There are three scenes—the beach, the forest and the volcanic plain where balls of hot lava drop from the sky—and then you get to the bridge. Here Horrible Hank stops dead center and pelts you with a new variety of rock that bounces. Should you manage to duck under this barrage and touch Hank, he tumbles off the bridge and into the water below with a damp splash.

The play is wonderful—challenging, exciting and great fun. The graphics are so tropical and lush you wonder why some large conglomerate has not discovered this island paradise and set up a hotel and bar so that after the chase you could relax with a cold pina colada.

Never wander too close to the bottom of the screen or you'll get stuck. Then you're fair game for fists, snakes and other predators.



FRANKENSTEIN'S MONSTER

Data Age/Atari VCS

By Mark Trost

The original Frankenstein's monster was a patchwork creation, and the Data Age video game based on Mary Shelley's tragic hero/monster is true to its origins. It too is a crazy quilt of borrowed appendages—in this case, old VCS cartridge ideas and graphics that have been combined to look like something different—something you can almost learn to love.

As a heroic Transylvanian (the Shelley novel is actually set in Switzerland), it's your job to keep the monster inside the castle by erecting a stone barrier. The castle is of *Donkey Kong* design, with three stories and trap doors (instead of ladders) leading to lower levels. You could swear you're the only Transylvanian named Mario as you move down the screen outrunning ghosts (suspiciously like Atari's *Pac-Man* characters), jumping over spiders and tarantulas (seemingly traced out of a grade-schooler's notebook) and vaulting over acid pools, boulders and other pitfalls (wink-wink, nudge-nudge, say no more) to fetch a rock from the bottom of the screen.

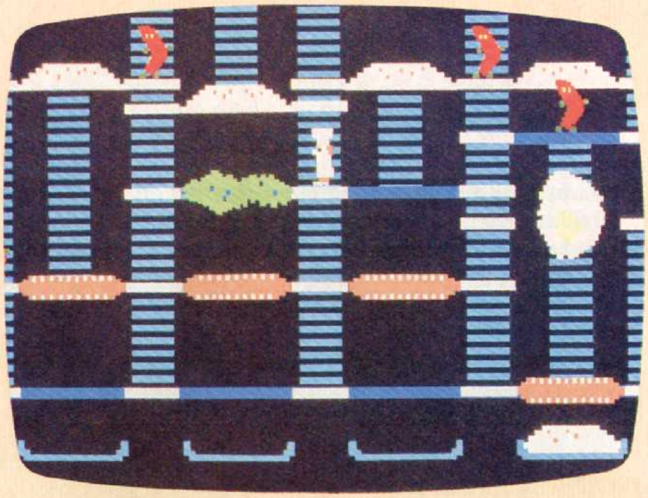
You start with 500 points and three lives. Everytime you fall through a trap door or contact an obstacle, you are momentarily stunned and lose anywhere from 10 to 200 points. If you fall into the acid, a life is forfeited. The monster escapes after all your lives are lost or he becomes powerful enough to escape. (This takes 30 lightning strikes on the equipment over the monster's head—anywhere from five to eight minutes.)

If you manage to pick up the rock and scramble back up the castle, the game moves into the second screen—the monster's chamber, containing a gauntlet of bats and demons that must be run in order to blockade the beast. Once the boulder is in place you're awarded 500 points and return to the first screen to capture five more rocks.

The second-screen variation would be a novel twist were it not a blatant re-creation of Data Age's own *Journey Escape*. Flanks of bats and bugs replace the groupies and managers to be avoided. Even the scoring (you lose points when you touch a bat) is similar.

Accomplished *Donkey Kong* or *Pitfall!* players will be able to bottle up the monster in short order. But for those who aren't familiar with those two cartridges, or who found them an interesting challenge, *Frankenstein* should prove a formidable and engaging opponent.

During the opening round, move toward the top trap door after the ghost passes over it. Stay in the door until the tarantula on the second level passes under you. You can then cross the ramp with a minimum of trouble.



BURGERTIME 🕹🕹🕹🕹

Mattel/Intellivision

By Randi Hacker

If you've always wanted to be a short-order chef but hated aprons and grease, *BurgerTime* will satisfy you beyond your wildest dreams. And you won't even have to learn the lingo. No "Adam and Eve on a raft and wreck 'em" nor "One cow medium and put legs on it. It's walkin'." *BurgerTime*, Mattel's new arcade adaptation, gives you all the joy of charbroiling without getting your uniform dirty.

As in the arcade game, you are a short but energetic chef who, apparently, hasn't heard of griddles or spatulas. You've got to construct hamburgers by running up and down ladders and then running across buns, burgers and lettuce which drop from the top layer down to form a complete hamburger at the bottom. It's a wonder the FDA hasn't closed this game down for health violations. Surely, walking on food can't be called sanitary conditions.

Never mind. As you dash along, you are pursued by several edible enemies. You've got a couple of ways to outwit them, including luring them to the top and then dashing down a ladder, crushing them beneath the weight of a sesame seed bun or using your Pepper. Throwing Pepper, accomplished by pushing the fire button on the controller, effectively stuns the ferocious foodstuffs, allowing you to trample them under your feet. Once you've put together three delectable (if footprinted) hamburgers, your little chef raises his fists in triumph and you move on to the next level.

This game may be Intellivision's finest hour so far. It's unerringly faithful to its arcade predecessor, right down to the tiny temper tantrum the chef throws when he's been outsmarted by the enemy. The music, graphics and game play are outstanding. It's such a wonderful game, you'll even start feeling benevolent toward the controllers.

Stop in the middle of a burger or bun and wait for the enemy to come after you. When they're all on, hotfoot it off the other side.

QIX 🕹🕹🕹🕹

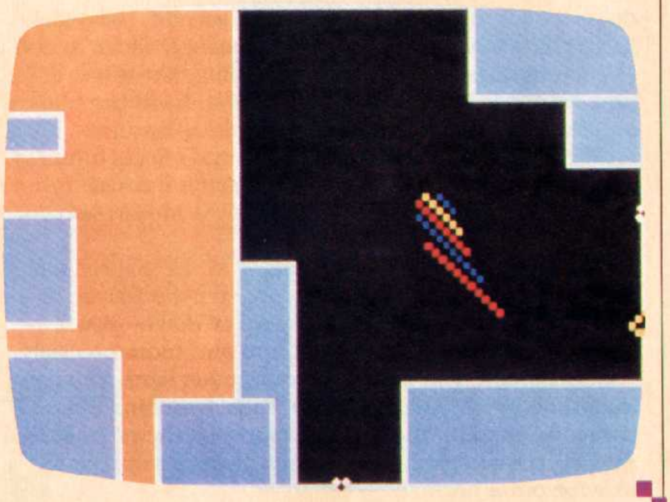
Atari/Atari 5200

By William Michael Brown

Whether you pronounce it "kicks" or "quicks", *Qix* is a rare treat. It was one of 1982's most aesthetically pleasing arcade hits—and Atari has done a masterful job of translating it into the 5200 format.

If you've never met up with *Qix* before, the game's theme could be called Combat Art. You control a diamond-shaped Stix—a kind of electronic paintbrush that leaves a continuous line behind it as it travels around the playfield. You start out on the bottom playfield border, with the purpose of enclosing as much of the playfield as possible with the lines the Stix draws.

All of this probably sounds like an aimless sort of video Etch-A-Sketch—except that your Stix is up against the Qix, a weirdly spinning bundle of colored lines that drifts randomly all over the screen. If it runs into your line while you're still drawing it, your Stix (one of five) blows up and you have to start again. The Qix thus forces you to either grab off a tiny hunk of acreage each time or, if it gets too close, wait for it to drift elsewhere. But you can't wait forever: rushing along the border and the lines you've already drawn are Sparx—and they'll do the same job the Qix does if they catch up with you.



Arcade *Qix* fanatics will find absolutely nothing to criticize; everything's here—from the original playfield, sounds, color and scoring indicators, right up to the double-Qix/split-Qix bonus scoring.

First bottle up the Qix on one side of the screen by building a long thin column up the center. Then strike out on the Qix's side, trying to force it into a corner.

RAM IT

Telesys/Atari VCS

By Marc Berman

At last! Another first-rate *Breakout*-type game with no space ships, dragons or nuclear meltdowns. This is gameplay stripped to its bare essentials: action, color and sound. And it works!

In *Ram It!* you control a Ramroid which travels up and down a vertical line in the center of the screen. Your object is to shoot away bars of color which advance on you from the left and right. You get ten points every time you hit a bar, and 400 to 1,300 points for hitting a flashing bonus bar. Points depend on how long the bar has become. Each game is three rounds, or screens. A round ends either when the bars completely block you or when the clock runs out. There are four difficulty levels for one or two players. The first one doesn't offer any bonus points. The second, third and fourth have bonus points and increasingly faster action.

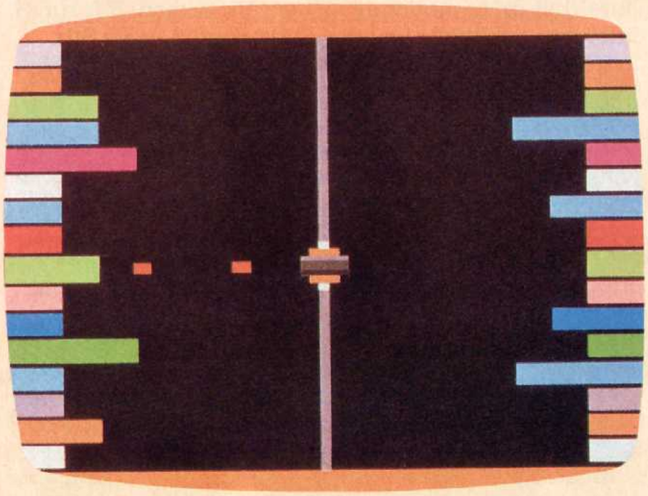
The graphics are definitely appealing, like a box of new crayons. The sound is a plus, too. Each bar makes a different noise when you shoot at it, a vast improvement over the monotonous sound effects in many games. If you could figure out a scale, you could probably play "Three Blind Mice." Or a Mozart sonata. A short one.

Although any slob can ram away at the colored bars, it takes a true virtuoso to really master the Ramroid. Tap the joystick lightly to move up or down—it will save you precious time and let you aim more precisely.

Occasionally you'll hit two contiguous bars. You can save time by eliminating them, then switching directions and zapping their counterparts on the other side. And keep that firebutton down; it takes several shots to wipe out a bar.

Between games the screen will show the highest score, at least until the machine is turned off.

Challenging it is. Cutesy-poo it's not. Even the name is good—right from the dictionary of computer terms.



Ram one whole side of the screen first so you don't get blocked. The top and bottom bars can't block you so leave them alone until they start flashing, then go for the big points.

BEDLAM

GCE/Vectrex Arcade System

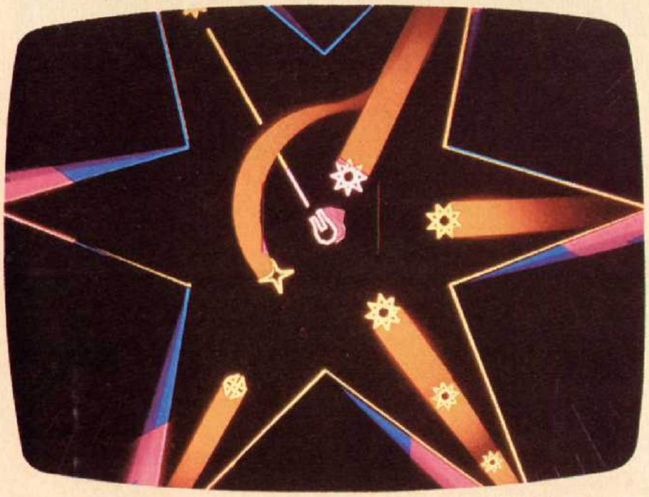
By William Michael Brown

Take the arcade hit *Tempest*, pull it inside out, erase its brilliant colors and add new features that make it tougher to beat, and you've got *Bedlam*. While it may not be that simple, GCE's *Bedlam* is probably as close as you'll get to a home-play *Tempest* without buying an arcade machine. And while some may never prefer it over the arcade favorite, there's still enough here in the way of design similarities, furious action and surplus challenge to divide the loyalties of even the most ardent *Tempest* fanatic.

All the more wonder, then, that GCE hasn't seen fit to put out a color-video version of its Vectrex Arcade System. The wild sunburst screen-overlay that comes with the *Bedlam* cartridge tries hard to overcome the problem, but since most of the color variations are at the edge of the overlay and almost all of the action is at the center of the screen, it just doesn't make it.

Still, that's the only disappointment in this game, which plays like *Tempest*-in-reverse. Instead of running around the outside of various differently-shaped arenas, zapping an army of alien shapes as they swim toward you from the center, *Bedlam* has you rooted in the center of the arena, in a laser-equipped gun turret that swivels to fire at enemies coming in from the edge. The arenas progressively change from diamond shapes to six-pointed stars. Out of each point come four types of enemies—snowflakes that head straight for you at a steady pace; disks that attack only when your laser is aimed away from them; crosses that can break off a straight attack to circle, waiting for a chance to sneak up from behind and nail you; and stars that act as moving shields for the other shapes and can only be destroyed with your Zap button (although you can push them back with your laser, getting a full score with each hit).

It's a lot harder than it sounds; every one of the tricks advanced players use to beat *Tempest* is harder or impossible to use in *Bedlam*. The arena layout means you can't just let things go past—they're all coming straight at you, and you can't move away. The Zap button, which wipes out every enemy on the screen at one time, has to be employed *very* judiciously; you only get one per arena, and there's no *Tempest*-style trick of hitting the button when the enemies are very close to get you out of a bind. You can get continuous fire by holding down the Fire button, but it's way too slow to be really effective. Your fire must be highly accurate to do damage, and the turret revolves slowly. There's a Fast Rotate button to help in emergencies, but try to use it all the time and you'll find all your fire going wide of the mark.



If you're looking for a home game to give you a real hot workout before heading down to the arcade to impress everybody with your *Tempest* prowess, *Bedlam* is just the ticket. Don't let them see you sweating over it at home, though—you could embarrass yourself.

As soon as the crosses break off, swing back and forth wildly. That will break up their attack—sometimes.

JEDI ARENA 🕹🕹🕹

Parker Brothers/Atari VCS

By George Kopp

The first thing to be said for (or rather, against) the latest *Star Wars*-inspired game, *Jedi Arena*, is that as a one-player contest it's one of the worst I've seen. On every level the odds are so stacked against you that unless you enjoy humiliation, you might end up smashing your cartridge against the wall. But first a brief description.

The one screen is the Jedi Arena, a kind of galactic Rose Bowl. The combatants, Jedi Knights, are at the top and bottom of the screen armed with lightsabers. These can be pivoted left or right with your paddle controller. In the center of the screen, moving randomly back and forth, is the Seeker, a high-energy laser ball according to the instructions, but its laser blasts are more like lightning bolts. You and your opponent have shields which get chipped away bit by bit each time you're zapped.

You use your lightsaber both to deflect bolts and to aim them against your opponent. Make a hole in your opponent's shield, zap him, and he dies a stroboscopic death. Strategy as well as reflexes are involved—you can't aim and deflect at the same time because your saber will be pointing in the wrong direction. From time to time the Seeker goes nuts and fires wildly all over the place. During these Seeker seizures all you can do is deflect—your fire button becomes inoperative.

There are four difficulty levels in both the one-player and two-player versions. In the top level of each the Seeker is invisible. In the two-player versions you can aim with deadly accuracy, but in all the one-player versions, not only is the computer better at deflecting than you are, but your aiming falls to pieces.

The game ends when one of the Jedi Knights has blasted the other three times. The contests can go on for quite a while as you and your opponent get more skillful, and unlike a lot of so-called two-player games, you're not just taking turns against the computer. This is a human vs. human fight.

Always concentrate on one spot of your opponent's shield. Five well-placed hits will zap him but ten scattered ones may not even put him in danger.

RIPOFF 🕹🕹🕹🕹

GCE/Vectrex Arcade System

By William Michael Brown

In the lurid gallery of video games specially designed to turn your every antisocial trait into a useful and desirable skill, *Ripoff* is a unique work: a fiendish masterpiece that draws on every ounce of your frustration, greed, paranoia and aggression—and then turns out to be still so brain-fuddlingly tough, the only way to conquer it is to team up with your equally freaky pals.

In the one-player version of the game, the frustration factor-is paramount, and it comes in a place most game designers would never think of—your spaceship, which starts out squatting numbly at screen right like some fat, modernistic mother hen. She *can* move, but she's no dipping, diving, lemme-at-em Defender: She's leaden, she limps, she's as nimble as five tons of frozen chicken. And if *she's* slow, her laser bolts are worse—they're like bowling balls on the Indianapolis Speedway. Added to this stumblebum defense is a greed problem with a truly mortal grip. Mother Hen simply *must* hold

on to a little clutch of "fuel cells" sitting defenseless in the center of the screen. They're of no use whatever to her and a snap to steal—and once The Threat makes off with the last of them, the game's over for her.

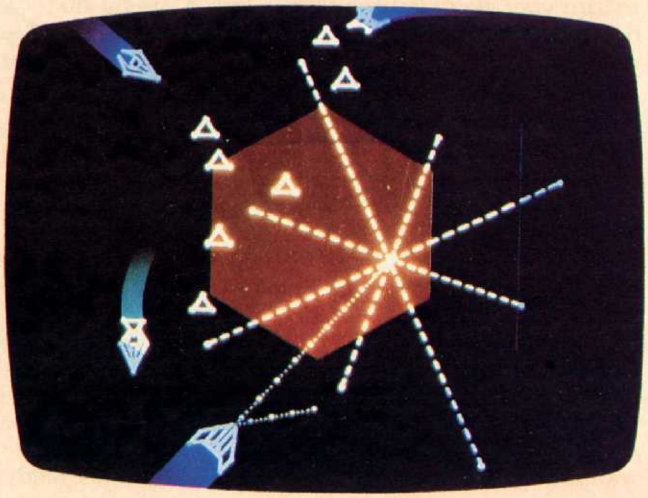
Given such a nasty situation, any reasonably competent Threat ought to induce instant terror—and Mother Hen's enemies are more than competent. Arriving in several waves of "space pirate" teams, they're not only faster than Mama, but whipcrack smart and ferociously aggressive too.

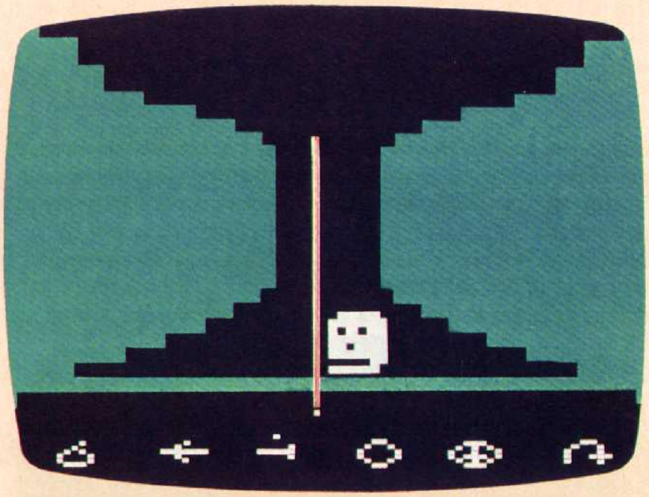
If Mom manages to get too close and the pirates aren't terribly busy, they usually deathray her into temporary oblivion with short-range lasers (you've got an unlimited supply of ships, but it takes about two seconds for each new one to appear). Sometimes she can just crash into them, but the brightest breeds split up, one distracting her with a furious attack while the others make off with the spoils. In short, gang, playing *Ripoff* all by yourself will have you purple with rage in seconds.

But turn it into a two-player game—with two Mother Hens on screen at the same time—and not only will your mental health return, you'll also find yourself playing an enjoyable game with some deep tactical subtleties to explore. Your all-too-human reaction time will now have a chance against the computer-controlled pirates, and with two of you on the case you can turn their divide-and-conquer strategy back on them.

Add the wraparound-fire option available in higher variations, and there is literally no limit to the strategic interest and enjoyment *Ripoff* has to offer.

In the two-player game, work out some voice signals to divide your responsibilities on the playfield, or you'll spend more time crashing into each other than you will doing in the pirates. And don't just sit over the fuel cells—you'll be a sitting duck.





CRYPTS OF CHAOS

Fox Games/Atari VCS

By Marc Berman

According to Webster's, a crypt is a hole in the ground. Which is where they should put this game and cover it with cement.

Presumably what Fox had in mind here was a VCS version of sophisticated computer adventure games like *The Wizard and the Princess* and *Adventureland*. What they got was a mess—poor-resolution graphics and more commands than you can conveniently execute with a joystick.

The object is nothing new: Slay monsters and collect treasures. Only you never see the treasure. You just have to assume it's there, in a monster lair, and select the "Treasure Sack Option." Say what? Okay, we'll start from the beginning.

You are a square at the bottom of the screen. There is also a square cursor at the bottom of the screen. Try not to get them confused, even though you will. You can move the cursor left or right over a menu of options—treasure sack, a variety of weapons, a peace symbol and a U-turn.

When you get attacked by a monster, such as a troll, frog, snake, skull, blob, eye, wizard or dragon you have to a) pull the joystick toward you to activate cursor; b) move joystick side to side to select action option; c) push joystick forward to lock in option; d) move joystick side to side to aim; e) press firebutton to shoot. Get the picture? The monster could finish law school by the time you're ready to fire.

Of course, you have to remember which weapons work on which monsters. Got that? Good. Cause each monster comes in eight random colors indicating how resistant they are to your weapons.

To find the monster lairs and invisible treasure, you move down corridors with your joystick. Fox recommends making a map on a piece of paper as you go along. There are eight lairs on each floor and more than 18 floors. There are stairways to go up and down between floors.

IS GRIDRUNNER™ UNBEATABLE?

No one, not even the author, has ever achieved the last Gridrunner. It is an extremely fast-paced arcade-quality game designed to test your coolness under fire and challenge your reflexes.

As the pilot of the Gridrunner, a combat ship, you must annihilate the various enemies traveling along the "Grid." High scores are possible only through the mastery of the patterns of the X/Y Zappers and the Gridsearch Droids which, when destroyed, mutate into potentially lethal Pods.

Gridrunner has 32 levels of difficulty (20 levels in the VIC 20 version). To this date, the 13th level has been the highest achieved.

Gridrunner is available for VIC 20, Commodore 64 and Atari 400/800.

Can you beat Gridrunner? See your local computer or games dealer and find out.

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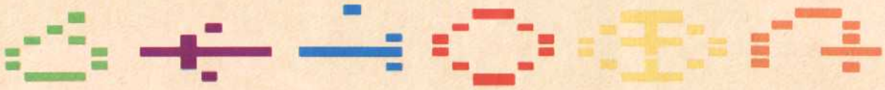
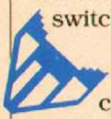
GRIDRUNNER



The graphics are lackluster. Looking down the corridors is a first-person affair, and the monsters approach from the far end, looming ever bigger as they come closer. It's a good idea but it doesn't quite come off. Even with the forced perspective, the corridors look flat. (Actually the resolution is so elementary that even the corridors look like staircases.)

There are four levels of play in which you receive different amounts of weapons charges. Difficulty switches control the rate at which monsters appear. The sounds are plodding—what's supposed to sound like footsteps sounds more like a truck crashing into a loading dock.



If you're looking for a maze/adventure game for your home console, *Advanced Dungeons and Dragons* is much more fun, suspenseful and better looking. If you're really into complicated fantasy games that make you think, you're better off getting a computer and some good adventure programs. *Crypts of Chaos* tries to straddle both genres and unfortunately falls into chaos.

Keep the instructions nearby so you can tell if you're at an intersection, a dead end, a lair or whatever. The variations are too similar to identify without a scorecard.

KEYSTONE KAPERS

Activision/Atari VCS

By Michael Blanchet

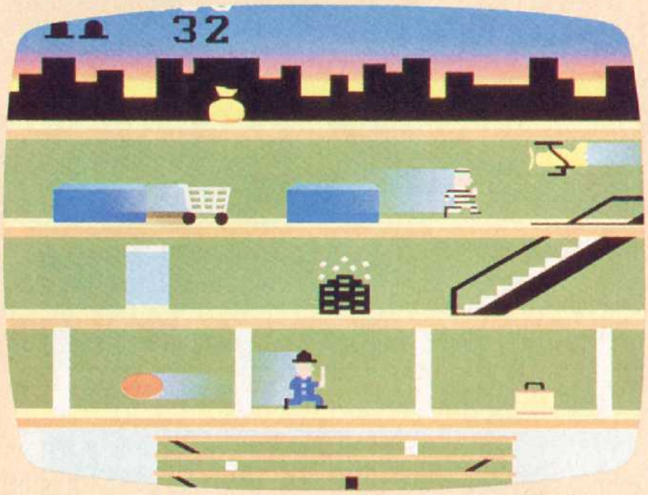
Dirty Harry's a cop, but in *Keystone Kapers* you're a Kop, Keystone variety. This game strips police work to its bare essentials—two legs and a billy club against a felon trying to lose you in a department store. (The store is either closed or overpriced—there's not a shopper in sight.)

When the game begins, you'll find yourself standing in the lower right-hand corner of the screen. The crook, on the other hand, is already on the second floor and making his way toward the roof. If he reaches the east end of the roof, you lose one life and must begin again.

The entire store—three floors and the roof—is much larger than what is seen on the screen at any one moment. As the cop runs off one edge, he reappears—a la *Pitfall*—in the next frame. My estimate is that the store is about ten to twelve full screen frames in width.

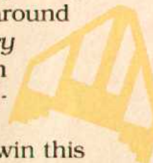
To reach the crook, our bungling hero must either use the elevator or the escalators. The lone elevator is in the center of the store. Like the escalators it moves automatically, pausing briefly at each floor before moving on. The escalators, which are positioned at either end of the screen, move perpetually but only in one direction—up. To locate the whereabouts of the convict, the player uses a long-range scanner at the bottom of the screen. At a glance, our gumshoe can determine the location of his quarry as well as his own position. Here is where he maps out his strategy. Should he take the elevator or the escalator, and should he get off on the second floor or the third? *Kapers* is not a pattern game, since the crook possesses a sixth sense regarding your whereabouts. I found this both a blessing and a curse. It's a super idea for the sole reason that it guarantees no two games will be identical. On the other hand, it's not uncommon to find yourself at an impasse with the crook, particularly when you are in the elevator approaching the floor he might be on.

One inconsistency that only compounds this problem is the fact that the criminal can jump down a floor when he reaches the east or west end, but you cannot. Your only available means of transportation are the elevator and the escalators.



To further complicate your mission, an unusual collection of obstacles will pop up throughout the game—including bouncing footballs, floor-sized cathedral radios, runaway shopping carts and model airplanes. These are avoided by jumping (footballs, radios and shopping carts) and ducking (airplanes).

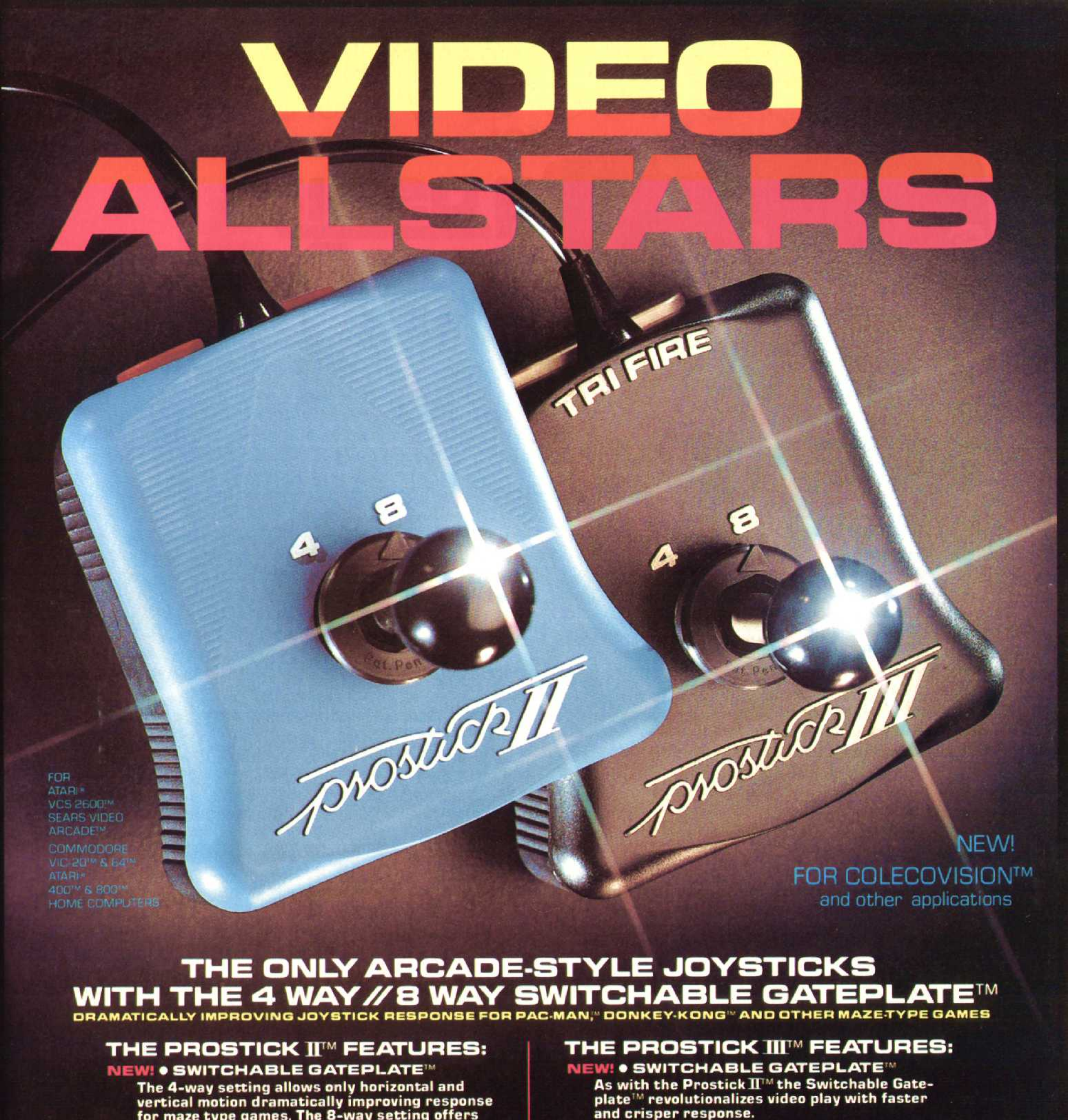
Quirks aside, *Keystone Kapers* is an all-around decent effort. Although it resembles *Donkey Kong* in some respects, it does offer enough graphic and strategic differences to be labeled an original.



I also like the fact that you can actually win this game. Instead of fleeing to another structure, the crook surrenders when caught, giving you that glorious but short-lived feeling of victory.

Just by riding the elevator, you often stand the best chance of catching the crook without really ever chasing him.

VIDEO ALLSTARS



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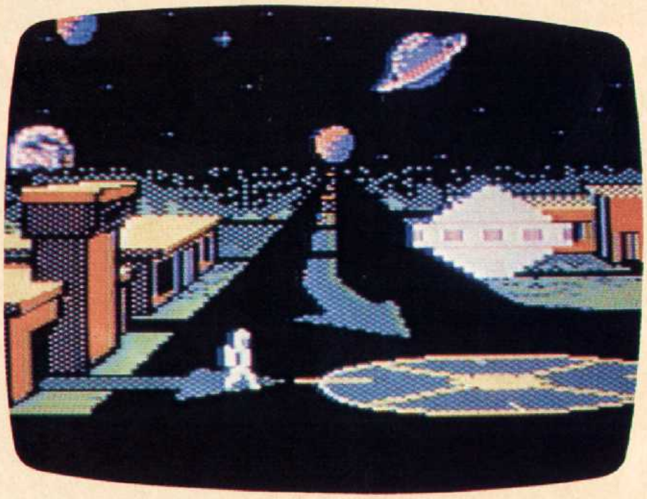

ASTRO CHASE

First Star Software/Atari 400/800

By William Michael Brown

Astro Chase is such a pretty game to look at, it seems a shame that it isn't more exciting to play. And that's perplexing, because at first blush *Astro Chase* looks like a space game with *everything*. It's got shield depots, it's got energy generators and it's got pulsating enemy mines so powerful that just one of them can blow up the entire Earth. It's got a screen full of zillions of colorful asteroids, planets and stars, and a picture of Earth so good it looks like it came right off the schoolroom wall. And then there are eight different kinds of enemy spaceships, 34 difficulty levels and no less than seven different animation sequences.

In short, *Astro Chase* has everything but an animated, laser-equipped kitchen sink—and therein's the rub. First Star designer Fernando Herrera seems to have either run out of room for, or just forgotten about, that other component of a hit game: challenging and innovative game *action*.

Once the game begins, the lovely 3-D starfield is just another 2-D maze—with round obstructions instead of walls—through which you must carefully dodge in order to ray down the pulsating mines creeping inexorably toward the Earth. The enemy spaceships show up at odd intervals to harry and distract you from your main job of eliminating the mines, and you can either shoot them or ram them.

Astro Chase's only notable variation from its predecessors is First Star's proprietary Single Thrust Propulsion movement system, which involves using a single tap of the joystick to lock your saucer on the course you want to go. After that, you hold down the trigger button and point the joystick in the direction you want to fire your lasers.

Is there really anything wrong with *Astro Chase*? No, not a thing. Just remember: the graphics are only screen deep.

It costs you energy to bump into planets or stars. Beware of wiping yourself out with too much maneuvering.

EVOLUTION

Sydney/Apple II

By Hartley G. Lesser

There's a veritable mountain of games written for the Apple computer. Within this crowded software assemblage are hundreds of look-alike games, and very few shining examples of evolutionary entertainment. Er, well, that *was* true until a game came to the forefront whose very name implies an evolutionary advancement of gaming skill. The name? Why, *Evolution* of course.

Three levels of difficulty may be selected. Until you're familiar with the game, don't be a hero. Start out at Level 1, for Heaven's sake. Only experience playing the game develops truly competent participation at each of the six evolutionary steps. And the only way to gain this experience is to *finish* each of the stages.

First stage . . . amoeba . . . eat the DNA cells on the screen and avoid the spores, microbes and antibodies swimming about the screen trying to do you in. Second stage . . . tadpole . . . snack on three jittery water flies before the fish eat you! Third stage . . . rodent . . . scramble through tunnels of your own creation while avoiding the hissing snakes in your hunt for five pieces of cheese to gobble up. Fourth stage . . . beaver . . . build a dam with five sticks and hope the hungry alligators don't bag you. Fifth stage . . . gorilla . . . sneaky, underhanded monkeys are trying to swipe your five oranges, so belt five of them with coconuts and progress onward. Sixth stage . . . human . . . the mutants have revolted, and you have to slay ten of the revolutionaries to win. Your reward? Why, you get to watch the entire human race come to its dismal end.

When you're a rodent, thrive on tunnel construction and do your business only when you have to!

CHOPLIFTER

Broderbund/Atari 400/800

By Paul Backer

Choplifter has to be one of the best variations on the *Defender* theme to date. The object of *Choplifter* is to rescue American hostages from burning buildings, where they are being kept prisoner, and bring them across the border to a U.S. Post Office. This task is complicated by enemy tanks on the ground and enemy planes and drones in the air.

The first thing that you notice about *Choplifter* is its unorthodox method of firing and movement. For example, in order to be able to attack the tanks you have to turn around into a special bombing position. On

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the other hand, the helicopter handles pretty much like an actual helicopter, and you can crash if you land too hard.

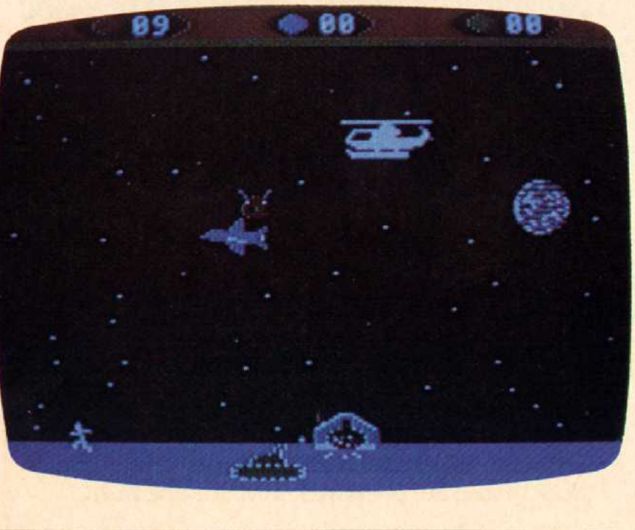
But the really strange part about *Choplifter* is its scoring system. The game doesn't keep track of how many enemy tanks or planes you destroy. All it records is the number of men you have safe inside the post office, how many men are in your helicopter at the moment and how many got killed. But once you think about it, it really makes sense: The object of this game is not to take on an entire country with one helicopter, but to rescue the hostages.

This game is incredibly well-made. After the chopper is loaded with the maximum number of people it can carry (16), the men stop running towards the chopper and wave goodbye. All in all, this game is graphically very pleasing—you can even see stars on the flag above the Post Office, and when the helicopter implodes and bursts into flames after being hit, it is absolutely stunning.

My only complaint is that you can't start over in the middle of a game. My version of the disk also had a lot of loading problems.

It appears that Broderbund's policy of making a "clone" of every game they make available to Atari and Apple has, in this case, paid off, unlike their somewhat less spectacular pinball game *David's Midnight Magic*. *Choplifter* is a very good buy for your money, especially considering that Broderbund has one of the most conscientious guarantees, even offering to replace physically damaged disks for $5.

Starting with the second sortie, move forward normally, and as soon as you see a plane or a drone, pull back. This should raise the nose of your chopper and allow you to destroy the plane.

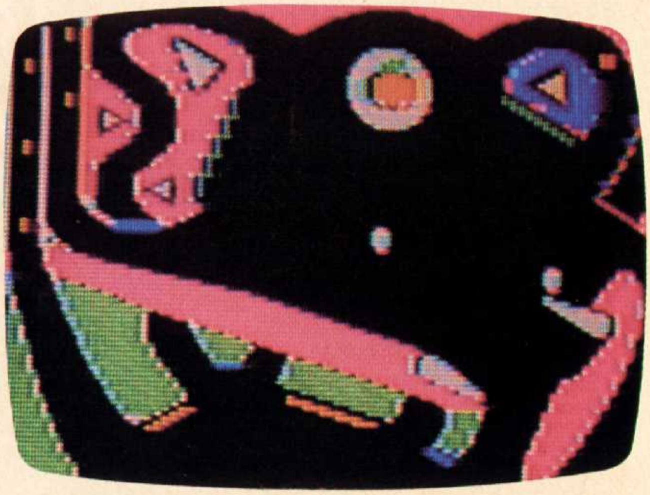


DAVID'S MIDNIGHT MAGIC

Broderbund/Atari 800

By Paul Backer

David's Midnight Magic is a faithful simulation of a pinball game. The question is, who wants to play pinball in this age of crazed robots and monster aliens who spirit pathetic humans away to fates far worse than death? On the other hand, if you feel that pinball was treated unjustly, then this game is for you.



The game provides you with a very sharply drawn pinball field on which you have a bumper, a ball trap, two sets of flippers and multiple targets to hit. You can control the tension of the spring when you hit the ball, and determine which flipper you want to use. The ball even changes direction if you hit it with the tip of the flipper as opposed to hitting it with the middle. Although *David's Midnight Magic* promises a lot of things, it unfortunately has some trouble delivering on them. For example, it says that you can apply 'body english' by pressing the space bar but if you press the space bar nothing happens except that you might see a pretty red sign saying "Tilt." That's about it.

The game is especially disappointing to anyone who's played the version for the Apple II. The biggest problem with the Atari 800 edition is that you have to control the game by using two paddles. While it's terrific that there's a game besides *Breakout* which uses paddles, two Atari paddles at the same time just don't work. Apple paddles are slim, but holding two stubby Atari paddles causes what can be mildly termed "discomfort."

When hitting the ball, set the spring a bit above medium tension. This will let you rack up a lot of points on the upper half of the field.

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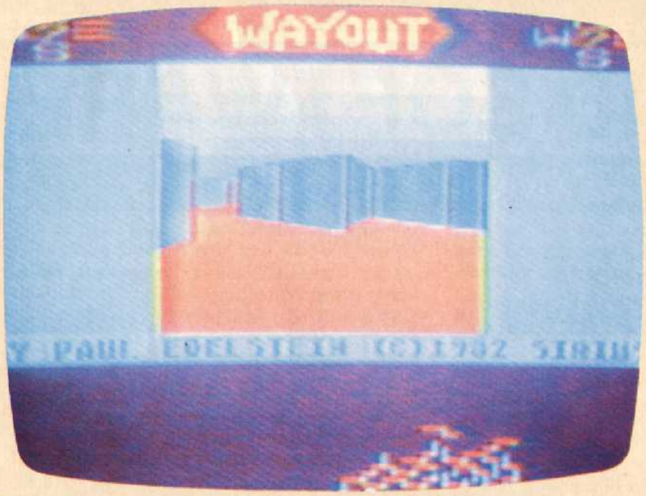
WAYOUT

Sirius/Atari 800

By Phil Gerson

Wayout is a maze game with a big twist. While other such games give you a view from the top, *Wayout* uses superb 3D graphics to put you right in the middle. Everything appears as it would if you were actually trying to walk through the maze itself.

There are twenty-six totally different mazes for you to escape from, and not even the introductory maze can be considered a pushover. It's all too easy to become very disoriented as you pass the tall blue walls—they all look alike no matter which maze you are in. To help in your search for the Wayout, you're provided with two on-screen tools. One is a compass that shows you the direction in which you are heading. The other is a standard two-dimensional maze map that is drawn as you wander, and contains a moving dot that shows where you are and where you are heading. Each time you see a new wall or door opening, the mapmaker sketches it in.



Of course, a compass and map would make things too easy, and so you have to fight to keep them. Entering every maze with you is a harmless mischief-maker called a Cleptangle, and the name fits. It's a kleptomaniac 3D rectangle that flashes in red and white and sneaks up on you to steal your tools.

To recover the equipment, you have to catch up with the Cleptangle and tag him. Finding him isn't too hard, as he often comes back to find you and his approach is always signaled by an alarm that gets stronger as he gets closer.

When you do find it, the Wayout is easily identified. It appears as a flashing panel changing from red to black to blue, and emits a distinct buzzing sound easily distinguishable from the other game noises.

While definitely better than most other maze games, *Wayout* has its drawbacks. After a while, looking at the uniform dark-blue walls gets monotonous. But the graphics are excellent, and the mazes are original and challenging. *Wayout* also keeps score by showing how much distance you covered getting out. The score, along with the player's initials, can be permanently entered alongside the name of the maze in the selection menu, so score-beating becomes the challenge of a maze you have already solved.

If mazes and puzzles are your thing, then *Wayout* is for you. But if you're a person with little patience or no natural sense of direction, you're likely to find nothing but frustration.

The Wayout can be located anywhere, but is usually somewhere in the middle of the maze. Searching the outside edges is generally a waste of time.

TRASHMAN

Creative Software/VIC-20

By Art Levis

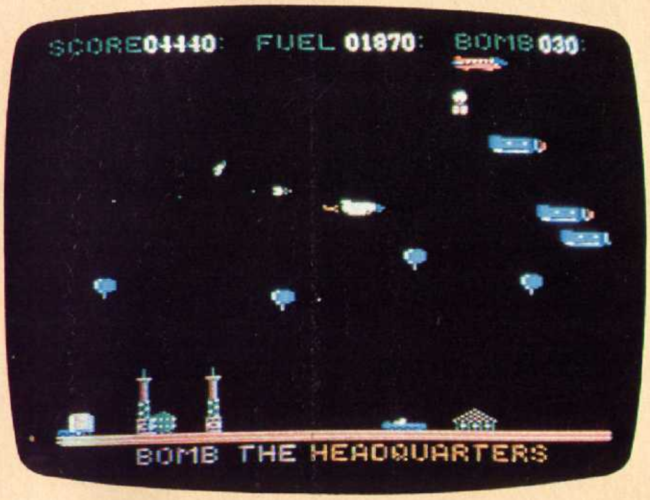
This time around it's dirt instead of dots, but the basic idea's the same: race around a maze eating some little things and some big things, and make sure the evil things don't eat your things. If your thing is meandering through mazes, that's not all bad.

There are some distinct differences between *Trashman* and other eat-em-up extravaganzas. For one thing, it has a fairly elaborate plot. Seems the town fathers have decided to sweep with a clean broom, and you've decided to pitch in by driving the garbage truck.

But life in the trash lane isn't without its messy little problems. As you zip around to take out the garbage and the trash, a scurvy band of pestilent flies is out to fix your wagon. Avoid them, pick up all the little yellow litter pieces (15 points each), the blue trash barrels (50 points) and what Creative Software has dubbed "The Bonus Character" (500 to 5,000 points, depending on the pre-set bonus level) and you win yourself a town chock full of new garbage and an advance to the next level.

While *Trashman* is good clean fun, I do have a few quibbles. My biggest problem was slowing Trashman's truck once it got into high gear. Unlike other such games—where you're generally able to stop on a dot—*Trashman* often just keeps rolling, even after you let go of the joystick. Other than that, it's a nice ride.

Park near a trash barrel, then wait for one of the repulsive flies to come winging your way. Just before he gets there, blitz the barrel and then stick it to the fly.



STAR BLAZER

Broderbund/Apple IIe

By Hartley G. Lesser

Every now and then, the Apple's awesome computing abilities are matched by a game whose scope leaves you nearly breathless. Such is the case with *Star Blazer*, a magnificent hi-resolution shoot-em-up from those gamemasters at Broderbund Software. As the pilot of a World War III jet, you're faced with some seemingly impossible missions. With joystick in hand and perspiration beading your forehead, you begin the game with your first mission: bombing a radar installation.

This requires some pretty frenetic low-level flying. You've got to move the joystick to dive and climb, speed up or slow down, and push the joystick button at just the right moment to unload your bombs on target—all while avoiding those radio towers and trying to catch the fuel being parachuted from the supply plane.

The second mission—bombing a tank—looks easy enough, but this tank has better tread than those cars running at Indy. You can accelerate, but don't fly too high . . . enemy fighters will blow you to bits. The third mission is another bombing run, only this time the enemy planes are laying down highly destructive sky mines. And there's still the resupply drop to catch. The fourth mission sends you back to the tank, but this one's firing heat-seeking missiles! If you make it through that, the last mission—to bomb the enemy headquarters—is the most difficult and demanding test of your flying skills. Everything but the kitchen sink will be tossed at you.

The high-resolution graphics are simply superb, featuring bright color, flicker-free animation, incredibly realistic bomb explosions and detailed backgrounds.

When playing, press your spacebar and enjoy a pause. Then tap your arrow keys . . . things'll slow down for you.

BANDITS

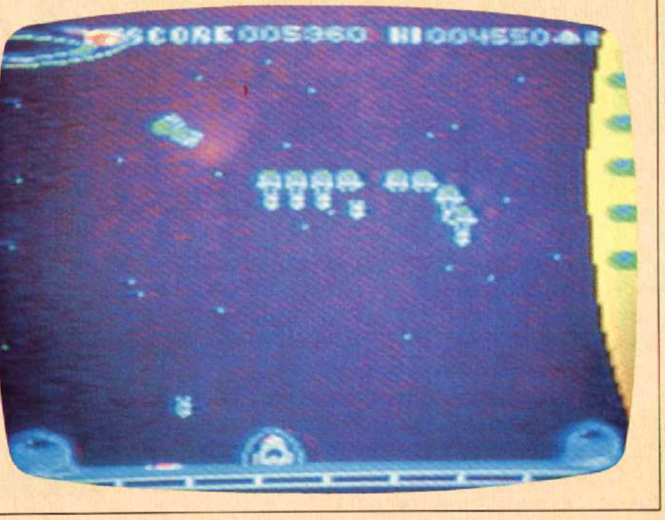
Sirius/Atari 400/800/1200

By Walter Salm

Okay, so at first it looks like just another *Space Invaders*-type shoot-em-up, but first glance is very deceiving. Right from the start there are differences, what with the innovative and humorous graphics of the spaceship gantry crane moving off the launching pad and an enemy saucer ship appearing. The object of the invaders, in addition to destroying your ground-based shooter, is to steal the five pieces of fruit on the Earth at the right of the screen.

There are several *Bandits*-inspired games such as Activision's new *Spider Fighter*. No matter. This one is the original and is both fun and funny. The shots you get off at the invading bandits don't sound like anti-aircraft missiles, they sound like someone blowing hard bubbles under a mountain of peanut butter. But laughs aside, *Bandits* is hard to learn and takes a lot of practice. Your ship can use shields for protection, but the shield uses up the fuel supply at a prodigious clip. The first screen of thieving invaders has three attacking waves. Get through them all, and you graduate to a screen full of bouncing balloons called Nuisants that are trying to do you in. Get past this screen and you have to contend with the Torrents—centipede-like invaders who also try to do you in and steal your fruit.

The one thing I don't like is the length of time it takes to start a new game. A lot of the program has to reload from the disk, which can take 10 to 15 seconds. But the game is definitely worth the wait.



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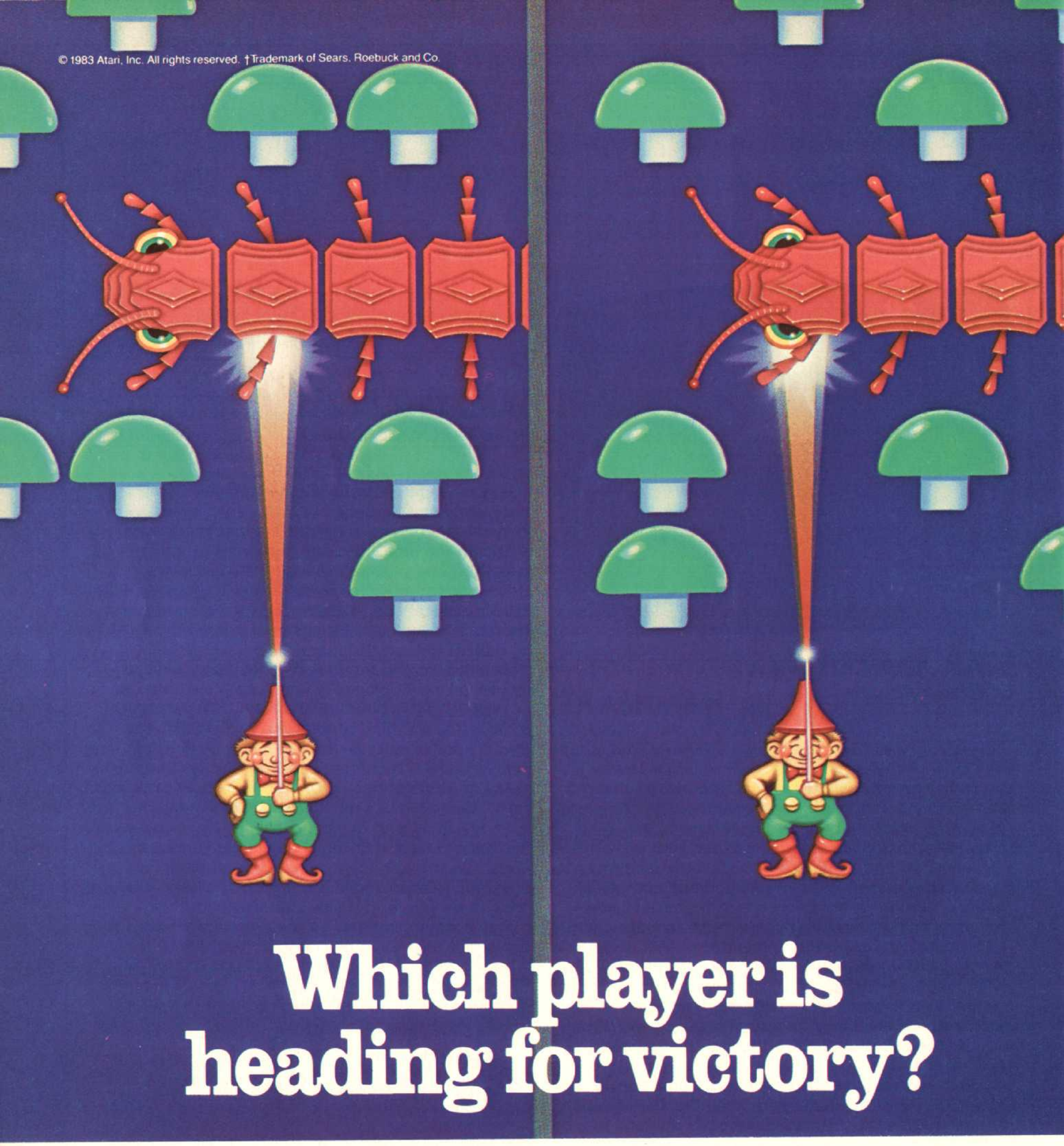
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Photo Tips: For best results, take the picture after dark with room lights off. If you use an instant or instamatic camera, tape opaque paper over the flash compartment or insert a dead bulb to force the lens open. DO NOT USE A FLASH! (We suggest you try a few practice shots, just to be safe.)

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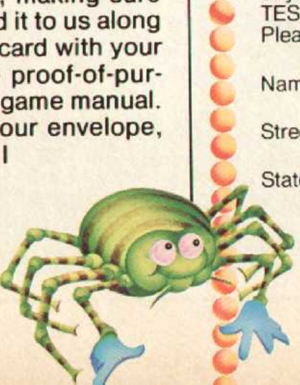

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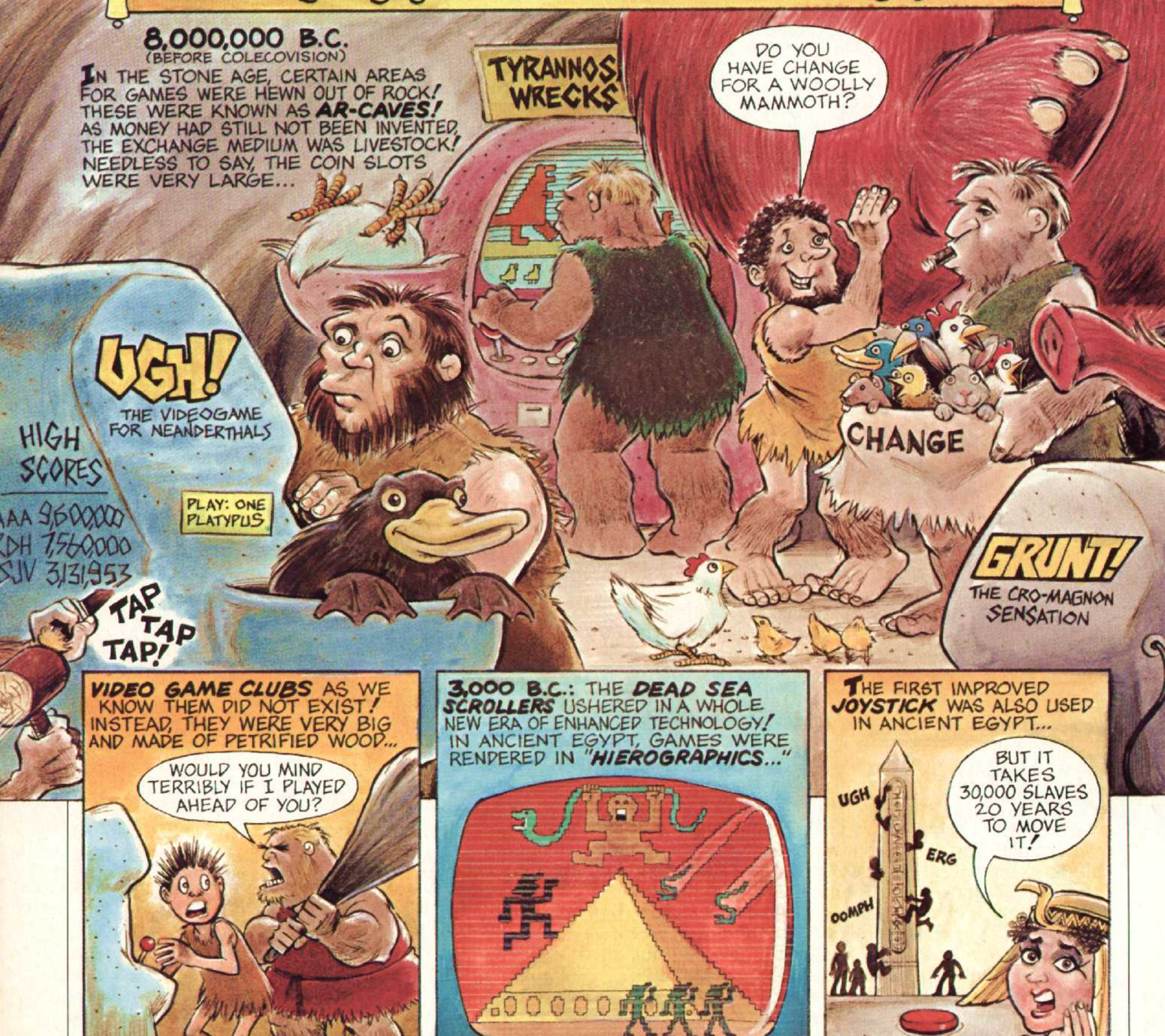
It would be silly to pretend that video games existed at the dawn of time. There were no arcade games for one thing, because the quarter hadn't been invented yet. And there were no home games either, because people hadn't been invented. But once man entered the picture, video games took off . . . and so does this article, which we call . . .

A BRIEF BUT WHOLLY FICTITIOUS HISTORY OF VIDEO GAMES

by Randi Hacker and Sam Viviano

Part I: Everything up to Columbus (and that's Enough for Now)


8,000,000 B.C.
(BEFORE COLECOVISION)
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TYRANNOS WRECKS
DO YOU HAVE CHANGE FOR A WOOLLY MAMMOTH?
UGH! THE VIDEOGAME FOR NEANDERTHALS
HIGH SCORES
AA 9,600,000
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PLAY: ONE PLATYPUS
TAP TAP TAP!
CHANGE
GRUNT! THE CRO-MAGNON SENSATION
VIDEO GAME CLUBS AS WE KNOW THEM DID NOT EXIST! INSTEAD, THEY WERE VERY BIG AND MADE OF PETRIFIED WOOD...
WOULD YOU MIND TERRIBLY IF I PLAYED AHEAD OF YOU?
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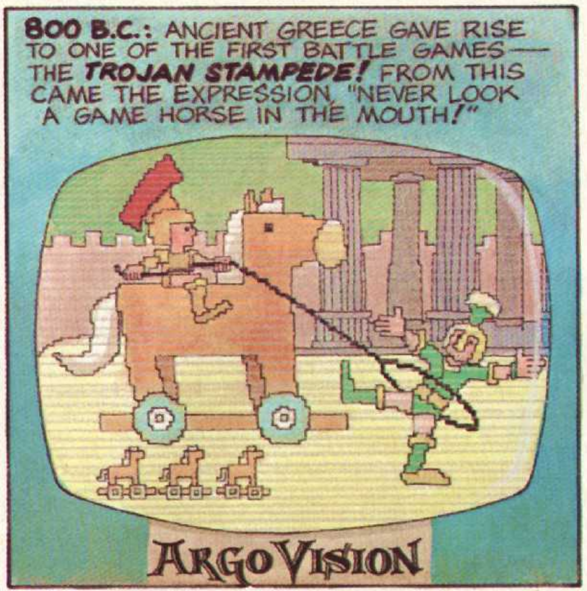
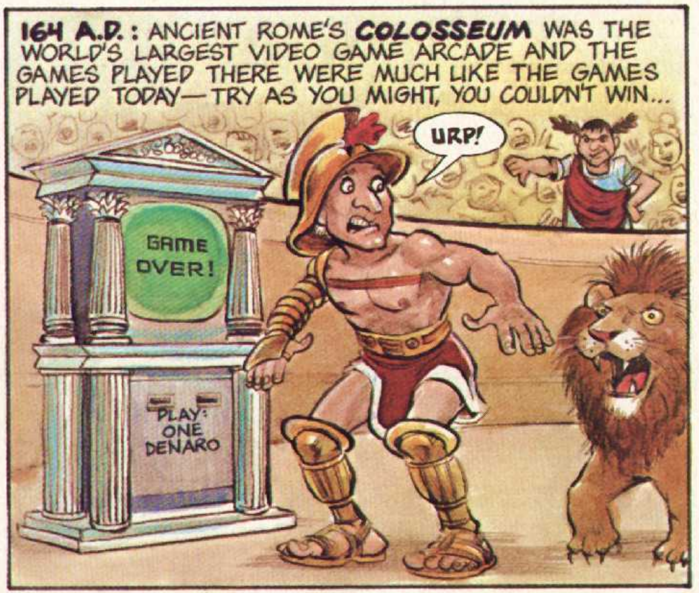
ERG
OOMPH



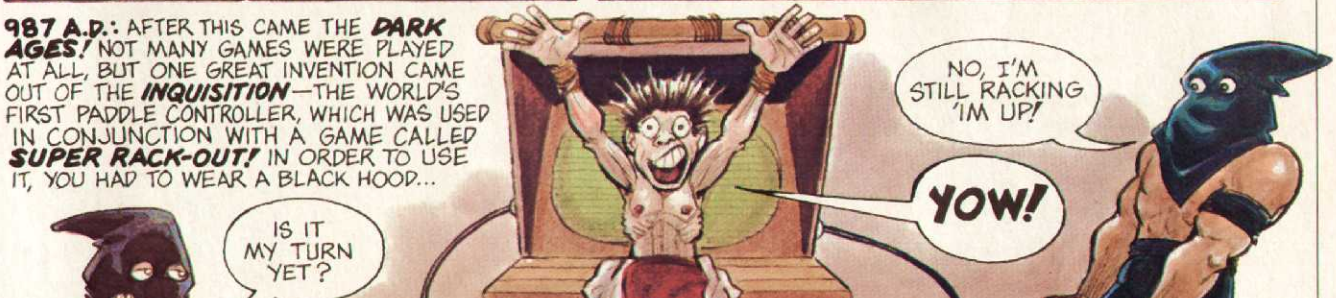
800 B.C.: ANCIENT GREECE GAVE RISE TO ONE OF THE FIRST BATTLE GAMES—THE ***TROJAN STAMPEDE!*** FROM THIS CAME THE EXPRESSION, "NEVER LOOK A GAME HORSE IN THE MOUTH!"

ARGO VISION



164 A.D.: ANCIENT ROME'S ***COLOSSEUM*** WAS THE WORLD'S LARGEST VIDEO GAME ARCADE AND THE GAMES PLAYED THERE WERE MUCH LIKE THE GAMES PLAYED TODAY—TRY AS YOU MIGHT, YOU COULDN'T WIN...

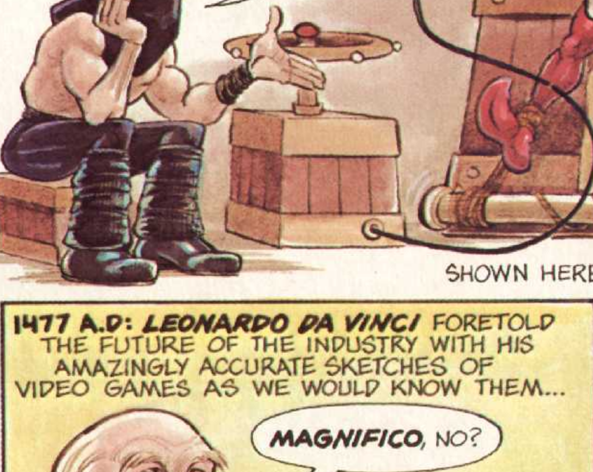
URP!
GAME OVER!
PLAY: ONE DENARO



987 A.D.: AFTER THIS CAME THE ***DARK AGES!*** NOT MANY GAMES WERE PLAYED AT ALL, BUT ONE GREAT INVENTION CAME OUT OF THE ***INQUISITION***—THE WORLD'S FIRST PADDLE CONTROLLER, WHICH WAS USED IN CONJUNCTION WITH A GAME CALLED ***SUPER RACK-OUT!*** IN ORDER TO USE IT, YOU HAD TO WEAR A BLACK HOOD...

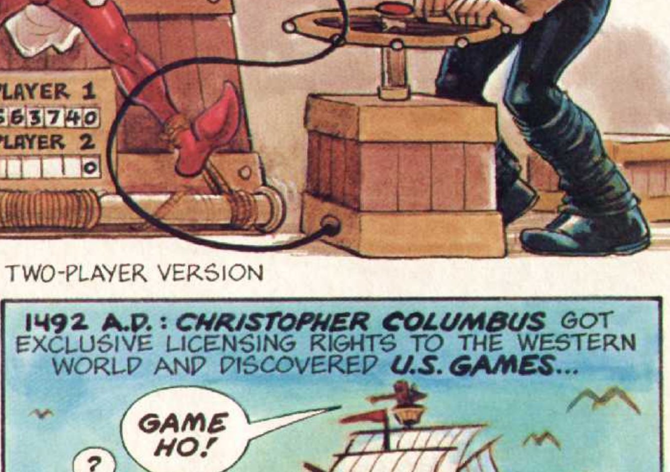
NO, I'M STILL RACKING 'IM UP!
YOW!
IS IT MY TURN YET?
PLAYER 1
563740
PLAYER 2
0

SHOWN HERE: TWO-PLAYER VERSION



1477 A.D: *LEONARDO DA VINCI* FORETOLD THE FUTURE OF THE INDUSTRY WITH HIS AMAZINGLY ACCURATE SKETCHES OF VIDEO GAMES AS WE WOULD KNOW THEM...

MAGNIFICO, NO?



1492 A.D.: *CHRISTOPHER COLUMBUS* GOT EXCLUSIVE LICENSING RIGHTS TO THE WESTERN WORLD AND DISCOVERED ***U.S. GAMES...***

GAME HO!
?
GAME CARTRIDGE

THUS WAS USHERED IN THE MODERN ERA—WHICH WILL HAVE TO BE TAKEN UP AT A LATER DATE, IF EVER...

monitor ///
apple
//e
Disk II

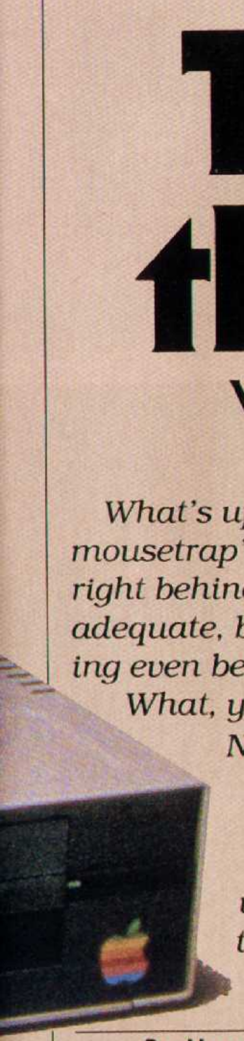
COMPUTER WORKOUT:

The CORE of the APPLE IIe

We test the latest fruit of knowledge

What's upgrade, doc? Since forever, people have been obsessed with the "better mousetrap" idea. Whatever comes out, there's always a new and improved edition right behind. It's the same with personal computers. At first, 5K of memory seemed adequate, but no more. Today's jaded users require at least 16 with 48 and 64 being even better. So everyone is jumping on the upgrade bandwagon.

What, you might ask, could be better than an Apple II? An Apple //e, that's what. Not only has the latest personal computer from Apple got a new look—some new keys and a redesigned back panel—it's got a new manual which takes you step-by-step from removing the machine from the box through using a disk operating system. And that's not all. There's both upper- and lowercase capability, memory expansion modules and almost total compatibility with all Apple peripherals and most Apple II software. All this and only 31 integrated circuits!



By Hartley G. Lesser

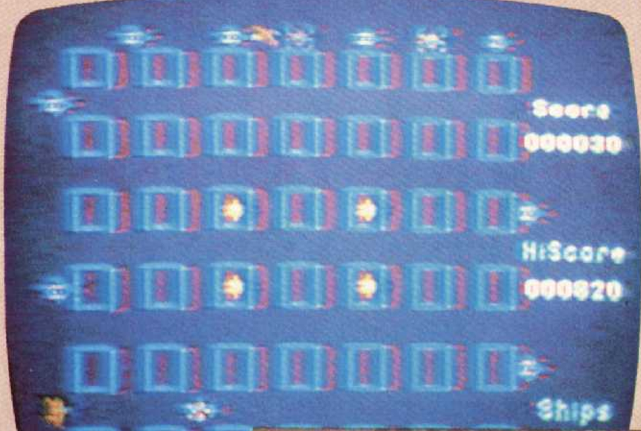
What's all this noise about a new Apple //e computer? Big deal . . . seems like every computer company in the world is coming out with an upgrade of this or a downgrade of that. There's the Atari 1200, a rumored slightly less-than-personal new IBM computer, a new Commodore 32K machine, and the Osborne II . . . where will it end?

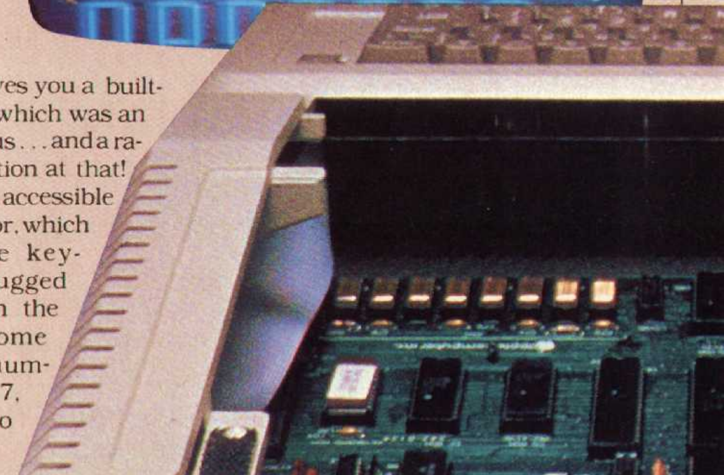
Well, for Apple, the //e represents the rebirth of their II Plus computer, which for years was the standard of the personal computer industry. But the little-machine-that-could was starting to suffer from too little memory, upper-case character restriction and a mere 40-column screen. Highly competitive machines with more RAM (Random Access Memory), upper and lower case character capabilities and 80-column text screens flooded the marketplace. II Plus prices were undercut by these upstarts . . . sometimes by several hundred dollars. Add to this dilemma the deaf ear Apple seemed to have turned toward the consumer and the overall sales scenario spelled trouble.

Clearly, the only thing to do was to upgrade the II Plus by playing upon the consumer's instant recognition of the computer's distinctive exterior design. Immediately noticeable is a change in the logo, some new key additions to the keyboard, and a redesigned metallic back panel. But there's more to the Apple //e than just good looks.

The //e is more than just a game machine. Perhaps a 'helper' might be a good definition. Apple Computers has truly tried to make the //e documentation readable (unlike the manual for the II Plus), and they've succeeded. A manual should combat, not cause, compuphobia. The Owner's Manual guides the purchaser through every phase of new ownership, from photo essay with supportive text describing how to unpack the computer and its subse-

OLD IRONSIDES





quent assembly, to a hands-on tutorial that introduces one to the disk operating system. Other details discussed in a layperson's terms are how the //e system works, with easily understood definitions and examples for 'hardware', 'software', 'main memory' and the like. The wide variety of applications for the //e are discussed, including a chapter dealing with programming. The //e's versatility for adding additional equipment is revealed in Chapter 7, with a troubleshooting guide, glossary of computer terminology and an index rounding out the manual.

Trite But True

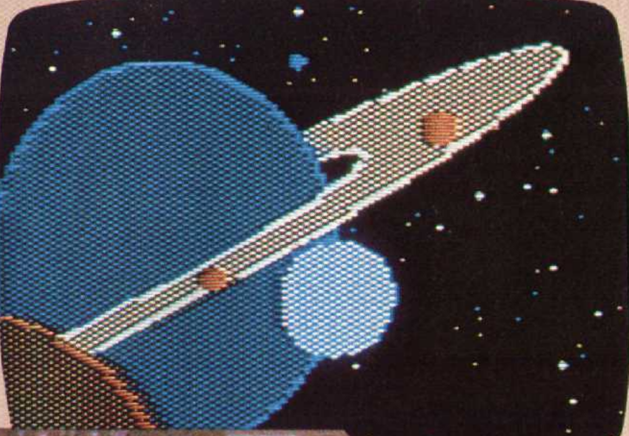
There's even a tutorial on disk that comes with every machine. This hands-on approach in learning how to 'converse' with the //e is both entertaining and functional. No matter how trite a phrase 'user-friendly' has become, it's certainly applicable to the new machine.

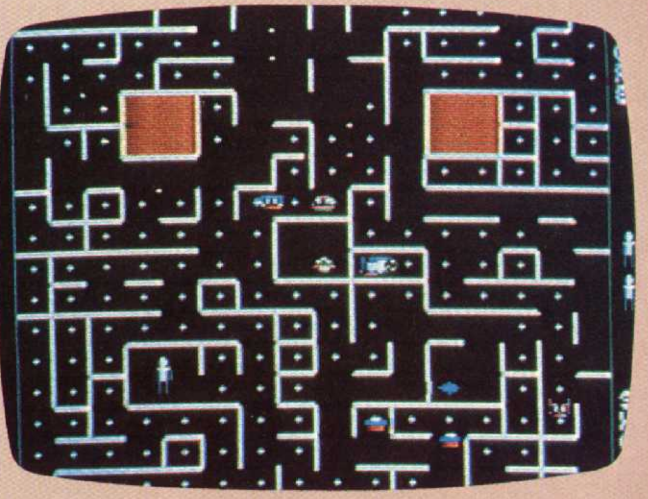
Care to peek under the hood? Only 31 integrated circuits! The II Plus had 110 of them. And the motherboard doesn't hide under the keyboard anymore. This'll certainly save you time and money, should servicing ever be required. And there's no need to remove the exterior case for most work. Next to the power unit (which uses half the power of the II Plus, by the way) there's a new slot. This is the 60-pin auxiliary slot where the 80-column video card is plugged in. Toward the front of the motherboard are eight chips that make up the 64K bytes of RAM that are now standard. That gives you a built-in language card, which was an option on the II Plus . . . and a rather expensive option at that!

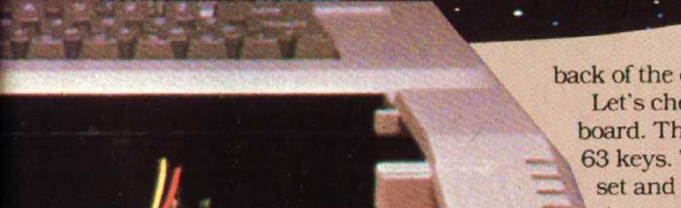
There's an easily accessible keyboard connector, which means compatible keyboards may be plugged in and used with the //e when they become available. Slots, numbered from 1 to 7, will continue to accept a majority of the various boards currently in use on the Apple II Plus. And how many computer companies can claim 98% compatibility between their differing models? I have interchanged the following personal boards between the II Plus and the //e and have encountered absolutely no operational problems:

ALF 9-voice music synthesizer
ECHO II speech synthesizer
SOFTWARE AUTOMATIC MOUTH speech synthesizer
LPS II Light Pen (with minor modification to board)
GRAPPLER printer interface
PKASSO printer interface
Apple parallel card
Apple Super Serial card
BREM serial card
ALS Z Card (for CP/M)
MICROSOFT Z-80 Card (CP/M)
THUNDERCLOCK PLUS

There's a new 9-pin hand controller connector as well as the old 16-pin plug-in game I/O port on the motherboard. An interior LED warns when the power to the computer is on, which should aid in preventing those nightmarish occurrences of yanking a controller board from one of the slots while the juice is flowing. Such disasters have sent many an Apple II Plus owner over the brink of sanity. The small audio speaker has







not, unfortunately, been improved, other than having been repositioned over an acoustical vent in the computer case.

Even the back of the computer has been redesigned. First of all, it's now metal, not plastic. This meets FCC requirements. The Apple II Plus notches have been replaced by rectangular openings that allow the cables from the various peripheral boards to be secured to the computer, thereby reducing damage caused by accidentally pulling a board through the back of the computer.

Let's check out the new keyboard. There are now a total of 63 keys. There's a full ASCII set and 96 printable characters and all 32 control characters are accessible. There's full upper- and lowercase capability, just like a typewriter. And the control characters work in either mode! An Apple II Plus emulation mode is possible when using the CAPS LOCK key, which shifts the letter keys to uppercase with no effect on the other keys. And how about autorepeat when holding down ANY key for more than a second? Just don't rest your thumb on the spacebar anymore . . . you'll zip across the screen. There are cursor movement keys for up, down, right and left control. No more dual keypresses like CTRL-I, CTRL-J, CTRL-K, and CTRL-M to move your cursor around the monitor. Two new special purpose keys have found a home on either side of the spacebar. These are the OPEN-APPLE and CLOSED-APPLE keys. A built-in memory test is accessible through a combination keypress of CONTROL, RESET and SOLID APPLE. A system restart is available through a combination keypress of OPEN-APPLE, CONTROL and RESET. These two distinctive keys can also be used as equivalents of game paddle buttons.

Really outstanding features, all. However, since most current software was written for the Apple II Plus, don't count on being able to use your cursor movement keys on most of the programs purchased prior to the //e's release. The software will have to be upgraded and rewritten so that the new keys will be recognized by the program. The CAPS LOCK key in the lower right corner should be maintained in the lock position when running software, as lowercase letters aren't recognized by programs written to run under DOS, or BASIC.

Don't Panic!

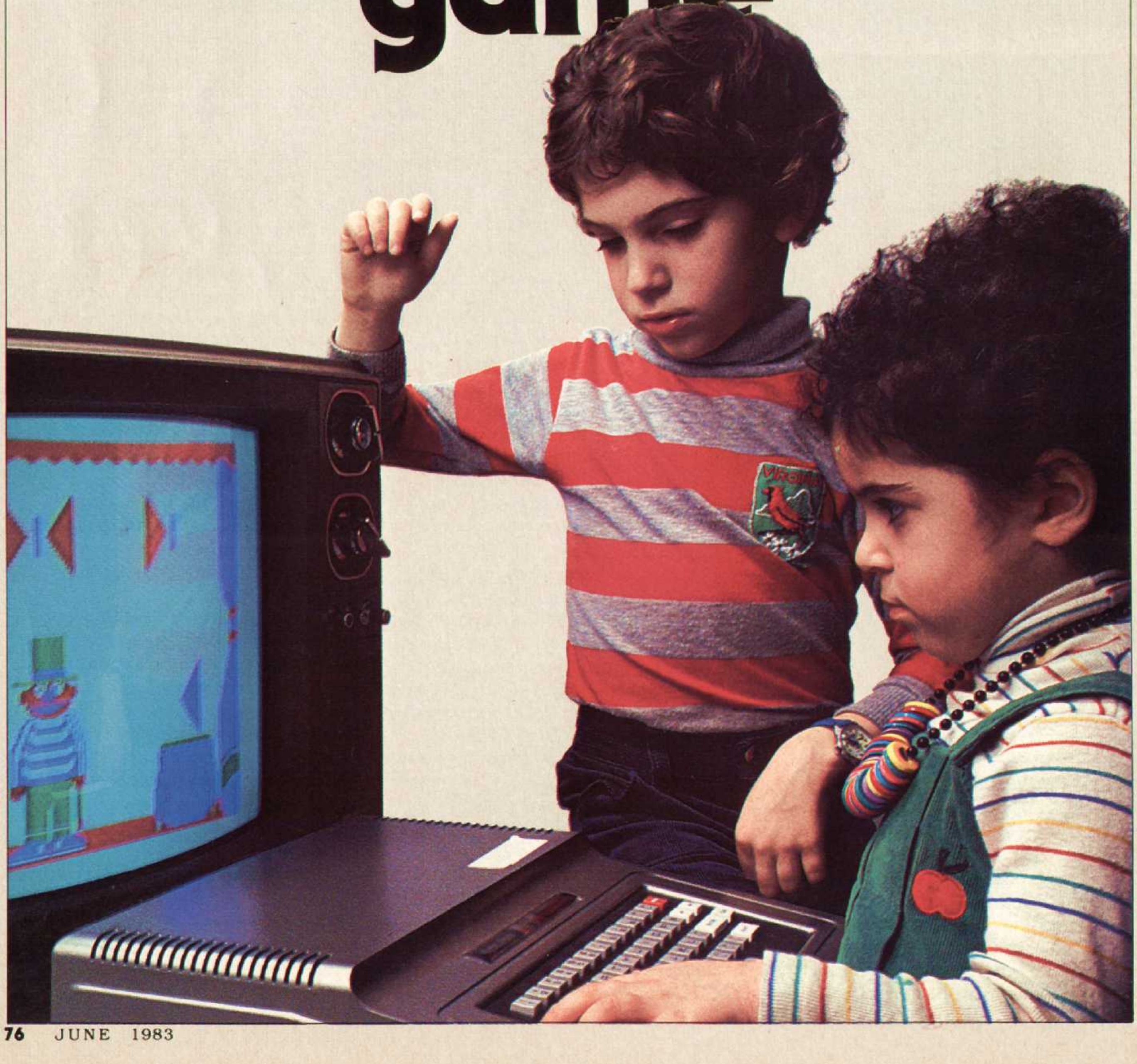
You might also run into difficulty with some of the older Apple disk programs because of their peculiar method of copy protection. Sound somewhat bleak? Don't panic. I have run over 400 pieces of entertainment, utility and business software through my //e, and only *twelve* programs proved themselves incompatible! And best of all, many of the Apple classics, such as *Galactic Empire*, the original *Prisoner* and *Zork I* operate just fine in the new //e environment. Newer software that's //e compatible should carry a little sticker somewhere on the packaging to indicate its //e friendliness. A wise

Continued on page 82

ROM with a view: At center, an inside look at the Apple //e's works. Top, some games for the Apple //e.

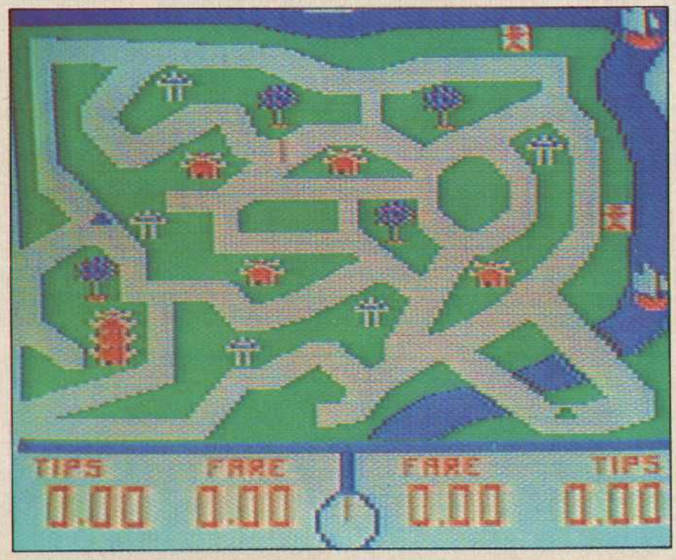
PHIL WISWELL'S GAMEMAKERS

The LEARNING game



Game designer Bernie Dekoven and friends

Bernie DeKoven has been playing games for forty years and creating them professionally for 10. He and his family were living happily on a 25-acre farm in Fleetwood, PA, until four years ago high technology crept into the barn in the form of a home computer, which DeKoven has come to call "the Swiss Army Knife of the mind." He became convinced that greater games than anyone was dreaming of could be created for the computer, games that only a computer could simulate. And within the year, DeKoven and family migrated to California.



sheep
house
fence
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end

Graphics from COOKIE MONSTER'S LETTER CRUNCH and PEANUT BUTTER PANIC.

Interview by Phil Wiswell

Through Ramon Zamora and Bob Albrecht, two pioneers of the microcomputer frontier, DeKoven was referred to Epyx/Automated Simulations, a computer game company, where he designed games for a year and a half. But as DeKoven discoverd, the Silicon Rush is on everywhere, and now he commutes 6,000 miles every other week between his home/office in Palo Alto and Children's Computer Workshop in New York, where he works with design teams on video games for children ages three to 13.

Three Projects

Children's Computer Workshop currently has three major projects: for the VCS, Atari 5200 and TRS-80. Joining DeKoven and myself toward the middle of the interview are three members of a design team DeKoven works with to produce 10 pieces of software for the TRS-80. They are: Dan Oehlsen, Project Manager, a special education teacher for seven years, currently earning his Ph.D. in psychology at Columbia University; Sandra Damashek, Creative Manager, who comes with six years experience at Children's Television Workshop, the parent company; and Joachim Kim, Software Designer, whose background is computer programming. CCW's approach is to develop video games using television production as a model; in fact, the same model that created *Sesame Street* and *The Electric Company*.

Not everyone at CCW is a computer programmer. Many of the team's members bring skills such as graphic design and psychology to the programs, as befits the people who bring SESAME STREET and THE ELECTRIC COMPANY to millions of young—and not so young—viewers.

EF: Is a game designer in the computer world of video games the same as a game designer in the plastic world of board games?

BD: No, because there are all these other talents that are involved—the graphic artist, the programmer, the sound engineer—they're all designers, too. I'm just the idea man. I think one of the things I began to realize as I got more involved in designing games for the computer is really that the words "game design" are no longer accurate to describe what my particular input is into a game.

You talk about design, but what about the person who designs the program, which is an art form? And the sound is really an art form. Who designs the sounds? I can only hint at the kinds of sounds I want, but the programmer or computer musician has to implement them. I feel that as I progress in the work, even though I'm contributing something that's like game design, I'm taking less and less total responsibility for projects.

EF: How much of your time is spent on video game design?

BD: All of my professional time and the majority of my non-professional time.

EF: Don't you wish you could snap your fingers and instantly become a proficient programmer?

BD: No, because if I were a competent programmer, I would be spending a lot more time trying to get one game finished, whereas a competent conceptualizer can start working on games he knows he won't get to for a couple of years.

EF: What's the satisfaction in designing video games?

BD: One of the most exciting things is when the game hits the screen in its first prototype and starts having life. Animating your visions makes them very real for you. And that's a tremendous kick!

EF: Most video games depict a hostile world, but not your game ALIEN GARDEN wherein strange and beautiful crystals grow.

BD: When I designed *Alien Garden* I was looking for a different kind of experience. I wanted to make an alien world, but not one that was necessarily hostile. A world that had some danger, but also some beauty.

EF: How do you playtest your basic concepts?

BD: I have to have something that I can play with on the screen. The sooner I can have that, the happier I am. My process is to look at a design... and reduce it to its simplest elements that I can interact with on the screen. In *Ricochet*, for example, you have very simple elements really. You have the rods that you can move. You shoot the ball at them; it bounces off the rod and the rod also turns as a result. Now, when you try to visualize that, it's really much too complex even in its simplest form. Your mind can't remember all of it. So you really don't know what it's going to be like to play with until you've had a chance to do just that. You really need a computer to design for the computer. It's difficult to do it with only paper and pencil. Maybe there are people who can, but what I trust is my sense of play.

EF: Which of your Epyx creations do you enjoy playing?

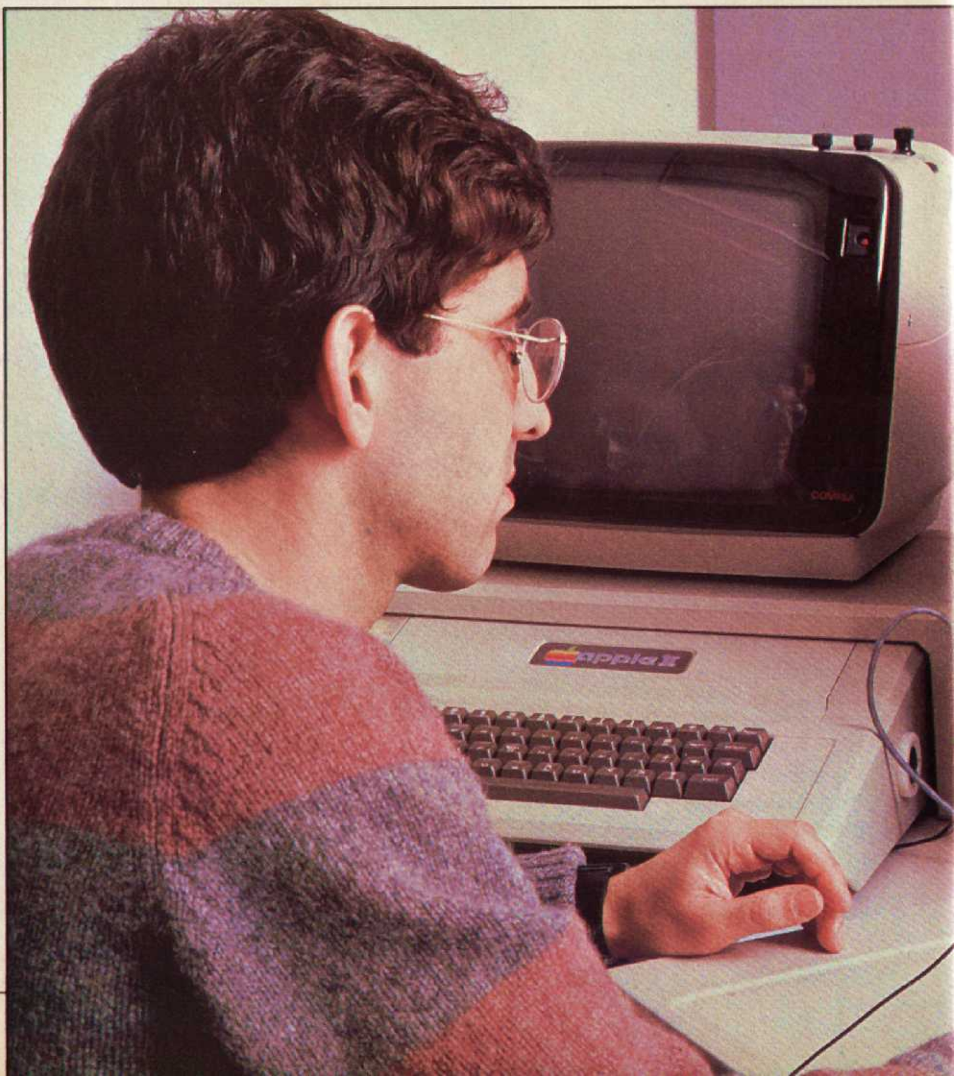
BD: As a matter of fact, both *Ricochet* and *Alien Garden*. Of course, I play those games differently from the way I would *hope* most people play them! I like to play them as close to mindlessly as I possibly can. I love *Ricochet*'s version five, where you can't possibly figure out where the ball is going to go without all the dots on the board to help you. The more I think, the unhappier I am about the game when I'm playing.

EF: Epyx was your first long term involvement with video games. How long were you with the company?

BD: A little more than a year and a half.

EF: Obviously, you worked on many game designs during that time. What did you learn with Epyx?

BD: I had the opportunity to practice my skills as a game designer in a different way than I had done before. As a video game evolves, you constantly have to redesign it. So game design isn't something that's done in a vacuum. The game



design is a continuing dialogue between concept and machine and that process doesn't really stop until the game is ready to duplicate. What I learned was a facility at changing approaches, at looking for ways of maximizing the capacities of a machine, of rethinking a game's structure even when it's near the end of its development.

EF: What new games have you seen that you like?

BD: I got excited by *Tron*. It's very nice with four different games and the way the games relate to each other. The feel of the control is very interesting. So is the episodic nature of the game And *Robotron*! A wonderful experience! So much is going on...

EF: It's a violent game, though.

BD: Violent schmiolent! The first thing I look for in a game is something that's engrossing to suck me in. Anything that's going to help stop the world for a minute. And if it does, then it's something I want to pay attention to.

EF: What are the elements of a good game?

BD: There's something about a good game that's haunting. You get something like a residual image from playing it. You remember yourself interacting with it. Sometimes the world even starts looking like it. You're driving around and you try to push a button so you can zap things out of your way. You start seeing things in relationship to the game. When that happens, I consider it a good game.

EF: What drew you to Children's Computer Workshop?

BD: When I talked with them, an amazing kind of synergy was apparent because all the stuff I talked about were things they wanted to be doing. All the sensibilities that I wanted to have were there. I wanted to be working with people who really cared about kids and their growth experience and the kinds of challenges we could provide.

EF: What do you think about when you start a new game?

BD: As a computer game designer, what I'm trying to do—and this is why I feel at home with CCW—is to provide a game that is so flexible that it responds to the amount and the nature of the challenge the person wants to play with. As a result, the player does not have a static model of the game that says "This is the way you play this game," but rather an active model that says "This is one of many different ways to play this game." That's the kind of control I try to

Continued on page 92

From left to right, CCW designers Dan Oehlsen, Sandy Damashek, Joachim Kim and Bernie DeKoven. Below, one of CCW's staff members studies the playability and graphics quality of a new game.

THE COMPLETE

...for all Commodore computer users—

ARTWORX has three games for the VIC-20, Commodore 64 and PET series in the Strategy category. They include *Bridge 3.0* and *Teacher's Pet*. Company's Pick: *Vaults of Zurich*. Deep within the mysterious vaults of a Swiss bank, you encounter a variety of obstacles and aides on your search for the keys to a king's ransom. **$21.95.** *Address: 150 North Main St., Fairport, NY 14450.*

AVANT-GARDE CREATIONS has one game for the VIC-20 and Commodore 64 in the Arcade category. Company's Pick: *Lazermaze*. In the 24th century, wars are fought between Man and Robot. In the Arena of Final Reconciliation, you are pitted against a fireball-spewing robot armed only with your single-shot laser gun. It only takes one miss to be burned alive. **$29.95.** *Address: PO Box 30160, Eugene, OR 97403.*

BRODERBUND has nine games for the VIC-20 and Commodore 64 in the Arcade category. The Arcade titles include *A.E.*, *Seafox*, *Martian Raider*, *Choplifter* and *David's Midnight Magic*. Company's Pick: *Serpentine*. Maze game featuring five different configurations casts players as a snake which must get to the giant serpents before they get to you. The snake must protect itself as well as its young from attack. Cartridge only. **$40 (approx.).** *Address: 1938 Fourth St., San Rafael, CA 94901.*

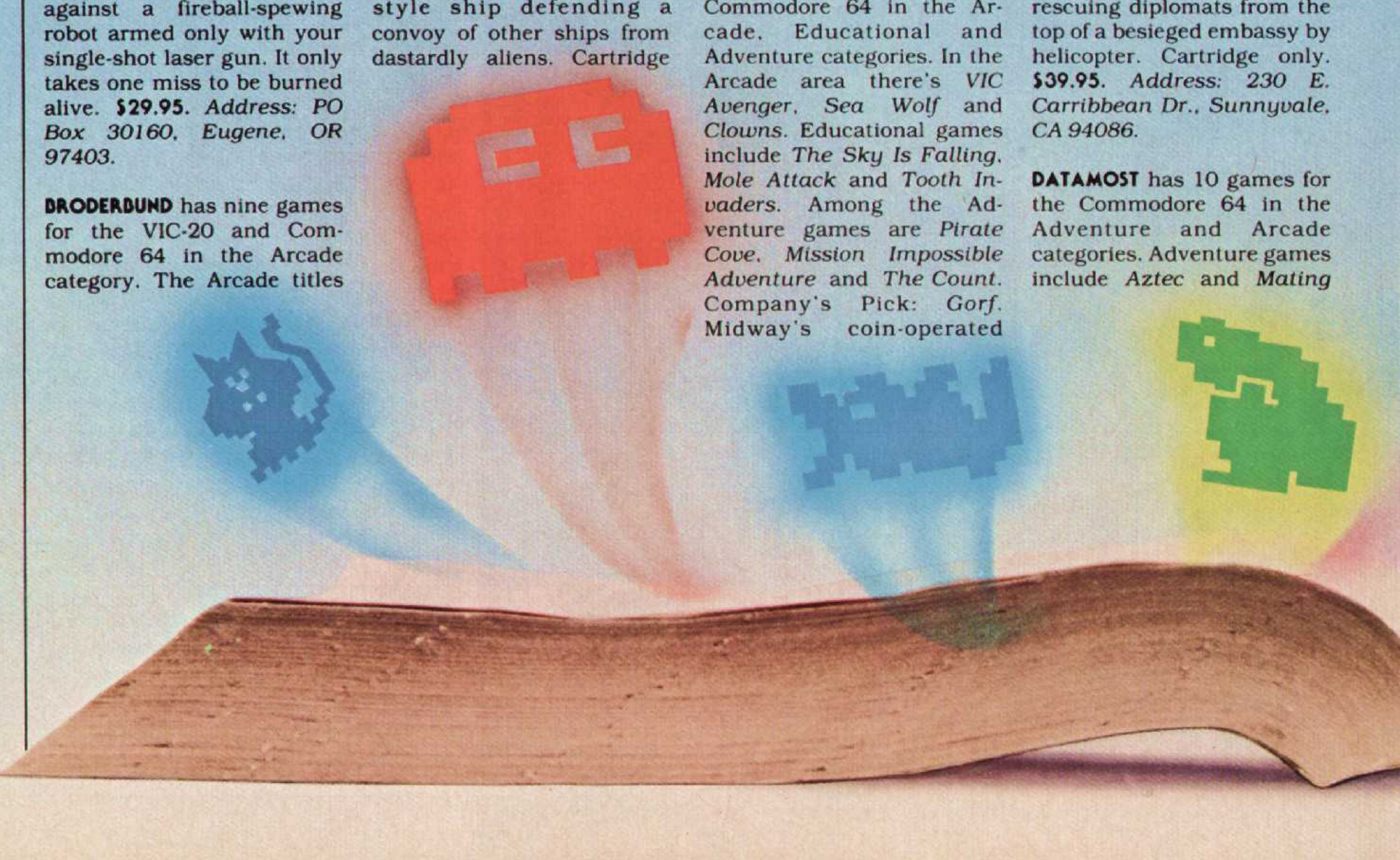
CBS SOFTWARE has two games for the VIC-20 in the Arcade category. The Arcade titles are *K-Razy Antiks* and *K-Star Patrol*. Company's Pick: *K-Star Patrol*. *Defender*-style space ship battle game casts players as the captain of a *Battlestar*-style ship defending a convoy of other ships from dastardly aliens. Cartridge only. **$40-$50.** *Address: 41 Madison Ave., New York, NY 10010.*

COMM*DATA has 100 games for the VIC-20 and Commodore 64 in the Arcade and Educational categories. Some of the Arcade titles are *Logger*, *Centropods* and *Escape MCP*. In the Educational area there's *Wordspot*, *English Invaders* and *Munch Word*. Company's Pick: *Pacacuda*. You are a fish instead of a cute little yellow ball, attempting to eat up all the squids and evade death-dealing eels. **$16.95-$19.95.** *Address: 320 Summit Ave., Milford, MI 48042.*

COMMODORE COMPUTER has 40 games for the VIC-20 and Commodore 64 in the Arcade, Educational and Adventure categories. In the Arcade area there's *VIC Avenger*, *Sea Wolf* and *Clowns*. Educational games include *The Sky Is Falling*, *Mole Attack* and *Tooth Invaders*. Among the Adventure games are *Pirate Cove*, *Mission Impossible Adventure* and *The Count*. Company's Pick: *Gorf*. Midway's coin-operated game includes four different screens, multiple levels of difficulty and the famed cartoon graphics which represent the ever encroaching Gorfian Empire. Cartridge only. **$39.95.** *Address: 487 Devon Park Dr., Suite 200, Wayne, PA 19087.*

CREATIVE SOFTWARE has 13 games for the VIC-20 and Commodore 64 in the Arcade and Educational categories. Arcade titles include *Black Hole*, *Trashman*, *Moondust* and *Apple Panic*. Educational games are *Pipes* and *Spills 'n Fills*. Company's Pick: *Choplifter*. VIC-20 version of the hit Broderbund game loosely based on the Iranian hostage crisis has the player rescuing diplomats from the top of a besieged embassy by helicopter. Cartridge only. **$39.95.** *Address: 230 E. Carribbean Dr., Sunnyvale, CA 94086.*

DATAMOST has 10 games for the Commodore 64 in the Adventure and Arcade categories. Adventure games include *Aztec* and *Mating*



GAMER'S GUIDE

the biggest Who's Who of computer games

Zone. In the Arcade area there's *Crazy Mazey*, *Roundabout* and *Tubeway*. Company's Pick: *Swashbuckler*. Transport yourself to those diabolical days on the Spanish Main—when evil pirates hold you captive aboard their wicked vessel. Only your courage and the cold steel of your sword protect you from death. So, you must lunge, parry and slash your way to freedom. According to the company, there's a lot of swordplay in this game. **$29.95.** *Address: 8943 Fullbright Ave., Chatsworth, CA 91311.*

DATASOFT has one game for the Commodore 64 in the Arcade category. Company's Pick: *Moon Shuttle*. Adaptation of the Nichibutsu game pits your moon shuttle against a variety of threatening obstacles including life-threatening man o' wars, meteors and bomb launchers. **$34.95.** *Address: 19519 Business Center Dr., Northridge, CA 91324.*

DYNACOMP has 46 games for the Commodore 64 and PET series in the Arcade and Strategy categories. Arcade games include *Games Pack I*, *Games Pack II*, *Star Base* and *Space Lanes*. In the Strategy area there's *Go Fish*, *Flight Simulator* and *Backgammon*. Company's Pick: *Space Evacuation*. Strategy game places you in charge of the Earth's evacuation team. You have a limited amount of time in which to relocate our world's populace before the sun explodes. You must find the inhabitable worlds, make certain there are adequate resources and colonize it. **$15.95-$19.95.** *Address: 1427 Monroe Ave., Rochester, NY 14618.*

EPYX has seven games for the VIC-20 and Commodore 64 in the Adventure and Arcade categories. Among the Adventure titles are *Sword of Argoal*, *Temple of Apshai* and *Datastone of Run*. Arcade games include *Rescue At Rigel*, *Crush, Crumble and Chomp* and *Ricochet*. Company's Pick: *Monster Maze*. Three-dimensional dual-screen maze game finds the gold hungry player in a multilevel building attempting to accumulate as many gold bricks as possible before the frightening monster gobbles him up. Players can munch on a power pellet and turn the tables on the monster. Cartridge only. **$39.95.** *Address: 1043 Kiel Ct., Sunnyvale, CA 94086.*

FOX VIDEO GAMES has 16 games for the VIC-20 in the Arcade category. Arcade titles include *Alien*, *Fantastic Voyage*, *Flash Gordon*, *Revenge of the Beefsteak Tomatoes* and *Porky's*. Company's Pick: *M*A*S*H*. TV show-inspired game puts the player in the middle of the Korean War's famed medical unit. As Hawkeye, you must rescue the wounded via helicopter and operate on them successfully before rival helicopter pilot Frank Burns can beat you to the soldiers. Cartridge only. **$35.** *Address: 4701 Patrick Henry Dr., Bldg. #9, Santa Clara, CA 95050.*

HAYDEN SOFTWARE has one game for the PET series in the Strategy category. Company's Pick: *Sargon II*. According to the company, "An acknowledged chess classic." Game allows players to try their skill against the computer on seven difficulty levels. **$29.95-$34.95.** *Address: 600 Suffolk St., Lowell, MA 01853.*

HES has 21 games for the VIC-20 and Commodore 64 in the Arcade category. The Arcade titles include *Aggressor*, *Shamus*, *Protector*, *Robot Panic* and *Pirate's Peril*. Company's Pick: *Gridrunner*. The enemy Droids are amassing on the

Continued on page 90

Illustration: Ann Neuman

COMPUTER WORKOUT

Continued from page 75

approach would be to ask your software retailer for a demonstration of selected software on a //e prior to purchase, if the software doesn't indicate its compatibility.

In addition to the changes in the computer itself, Apple is producing two 80-column video cards; one a Standard card with 1K bytes of RAM (which handles the information necessary to manage the video display), and a second card which has an additional 64K bytes of RAM.

Wow, an Apple //e with 128k? No, not really. The Extended card is simply 64K of switchable memory, accessible by setting special soft switches that substitute the auxiliary memory for the main memory and vice-versa. Quite an addition for the novice and professional programmer.

What it all boils down to, as far as the changes are concerned, is that for the user accustomed to the II Plus, some time must be spent in accustoming oneself to the new keyboard, as 12 symbols have moved to new positions. Since there are new characters available with the //e, some products won't take advantage of these features. A combination keypress on the II Plus, required for printing special characters like the ']' (SHIFT-M), are no longer necessary, as the right bracket is an actual character on the //e. Documentation will have to be updated, as well. The REPEAT key on the II Plus is gone, as all //e keys have auto-repeat. The four new control keys (UP, DOWN, TAB and DELETE) aid greatly in editing and the OPEN- and CLOSED-APPLE keys access special features. The RESET key has been moved out of the "Oops! I accidentally hit it" area and a combination keypress of CTRL-RESET is now necessary to reset the //e. Someone who types at an electric typewriter would have no difficulty whatsoever in becoming comfortable with the //e keyboard. After a half hour of work, I was typing as rapidly on the //e as I was on the II Plus.

So, what hath Apple wrought? A success, a timely upgrade of a proven product; an, efficient, friendly and extremely useable machine. The price? Well, there's the bundle pack, which consists of the 64K //e, a Standard 80-column card, one disk drive, an Apple green-screen monitor and a monitor stand for $1995. That price, my friends, is the SAME price as an Apple II Plus bundle pack. The basic //e unit is $1395, suggested retail. Many computer stores have plans that allow II Plus owners to trade in their old machines for a new //e at various costs. One such heavily advertised arrangement costs $450.

With the machine's increased memory, small business will find many a new application for the //e, while the gamer will marvel at the ever-increasing number of software entertainments available for the new computer. ☐

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4.	Snackman (Better than Packman)	$19.95	$15.95
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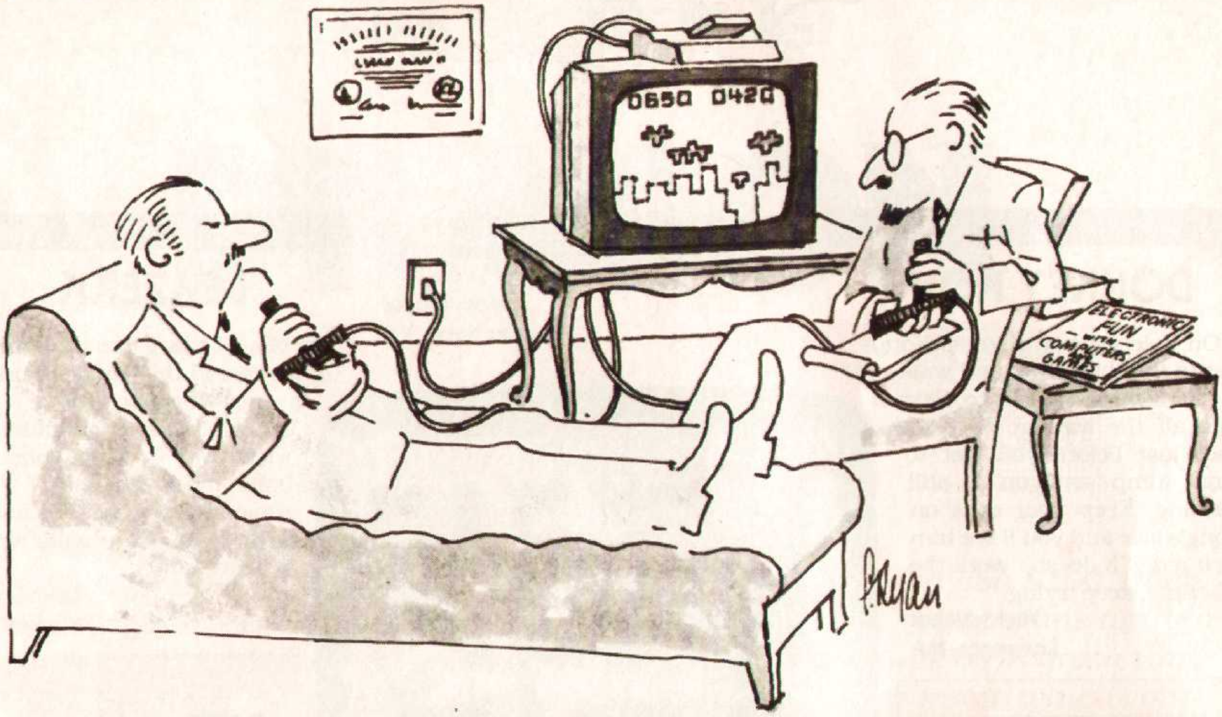
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Reader's tips

DONKEY KONG

On ColecoVision *Donkey Kong*: Get to the third level and walk past the ladder that leads to Betsy. Run all the way up to Kong and, just before you get to him, jump as you're still running. Keep your eyes on Kong's face and you'll see him turn *red*. If it doesn't work the first time, keep trying.

Niel Schiebel
Lawrence, MA

E.T.

Eat as many Reese's Pieces as possible and give them to Elliott—you'll get more points after E.T. leaves. If you need a place to rest after getting a piece of E.T.'s phone, stay in the well—the FBI Agent and the Scientist can't come down into it.

David E. Carver Jr.
Beacon Falls, CT

LADY BUG

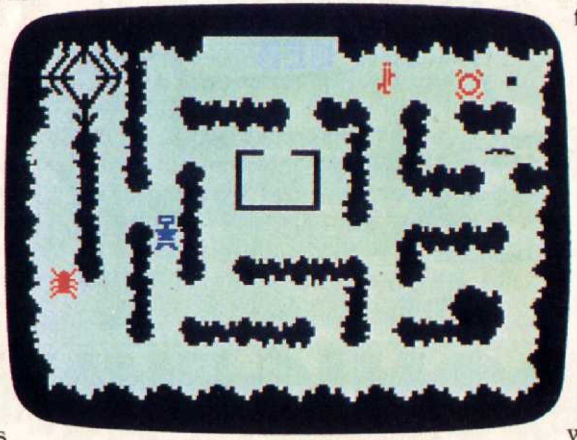
Your first moves should be to box in the vegetable garden. This gives you precious time to eat without interruption.

Patty Holzemer
Nashville, TN

NIGHT STALKER

After 5000 points a bat turns into a robot when shot, so never get yourself, a robot and a bat all in the same line. A robot only fires when he sees you, and by avoiding the bats the robot can't blast them while aiming for you. But always remember, never shoot the bat yourself.

Mark Bittner
Newport News, VA



ROBOTRON

The Grunt waves are the most complicated. The easiest way to escape them is to get outside the mass of Grunts and then run circles around them, always firing into the group. Brain waves are also a major source of points. The first thing you should do during these waves is locate the places with the most people, then go and collect them.

Dan Ciruli
Bloomfield Hills, MI

DONKEY KONG

When Mario is about to climb a ladder, push him up one or two rungs, stop for a split second, then push him up the rest of the way. You'll find he'll fly up the ladder at twice his normal speed (this also works climbing down).

William B. Simpson
Silver Lake, CA

BERZERK

I've played this game thousands of times and this always works for me: Whenever you're having a showdown with a robot (that is, when your bullet meets his), start moving in toward him and keep firing. Eventually you will get him.

Keith Simpson
Waukesha, WI

PITFALL!

I have a helpful hint for those who hate the alligators in *Pitfall!* You can jump on them when their mouths are open or closed, and if you stay on their eyes when their mouths are open, they can't eat you for dinner. Good luck!

Chris Serino
Mahopac, NY

TOMBSTONE CITY

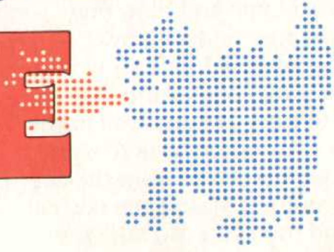
The Morgs appear in a pattern like reading a letter, left to right and top to bottom. If you learn the pattern, you can more easily destroy the Morgs. Also, if the Morg is destroyed near a pair of cacti, the pair turns into another Morg which can be easily hit. It is helpful to eliminate cactus pairs in this way since pairs create Morgs.

David Holloway
Henderson, NV

Do you have a tip for your favorite game? If it's good, we'll print it in Reader's Tips. *Send tips to:* Electronic Fun, *250 E. 81st St., New York, NY 10028.*

FIRST SCREENING:

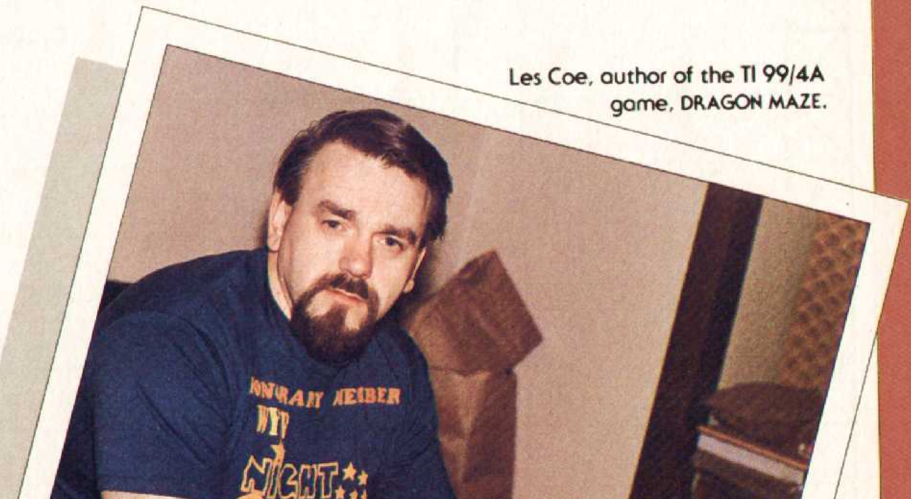
DRAGON MAZE



We're waiting to discover you.

Send us a program that you've written and maybe we'll send you $100. Each month in First Screening *we print a program that one of our readers has written. If you think you have hidden talent as a designer and you have a program that you think deserves recognition, send it to us. Be sure to let us know which computer it's for and to include a complete computer printout. For more information on how to enter, see page 88.*

This month's winner is Les Coe. He's 37 years old and a communications technician in a hospital. Les has been programming since he was in the service, and he's working hard now on an arcade game.



Les Coe, author of the TI 99/4A game, DRAGON MAZE.

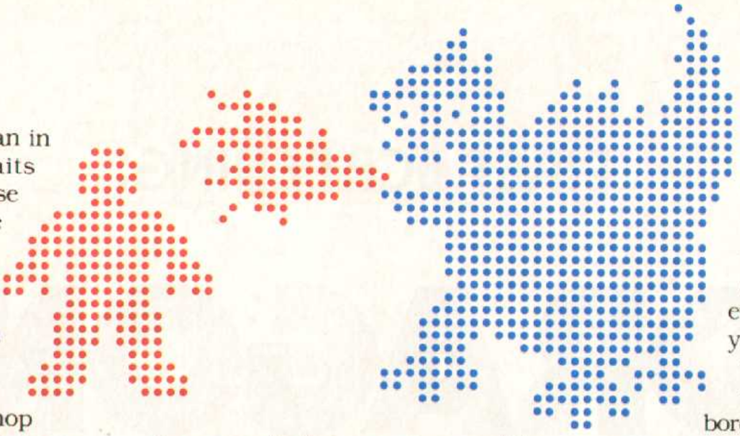
The Game

Dragon Maze is an old game with me and I've adapted it to each new computer I acquired. This program is for the Texas Instruments 99/4A computer. It is written in the stock BASIC for use with joysticks. It requires no additional hardware. I personally enjoy the amount of detail that can be produced on the 99/4A even in its stock form.

How To Play

Although *Dragon Maze* seems simple, its difficulty sneaks up on you as you continue to play until you finally lose all three lives. The game plays easily enough for young children, but it is still exciting enough to offer the challenge that older players like.

You are required to find your way home through what seems like a simple maze, but lurking around some corner is the dragon. As long



as you can keep your man in motion, the dragon waits patiently in ambush. Pause for even a second and the old boy starts moving around the maze.

Luckily, the dragon is so nearsighted that you can sneak right next to him. Don't stop, though, or he just might hop right on top of you and blow you away with a roar and a flame.

Reaching home (H) safely gives you 1,000 bonus points and puts you back to start. Hit any wall in the maze and you also go back to start, but you lose five points from the current step counter. Master the normal version and then you can take the challenge of the more difficult ones—invisible dragon, invisible man, invisible border or invisible maze.

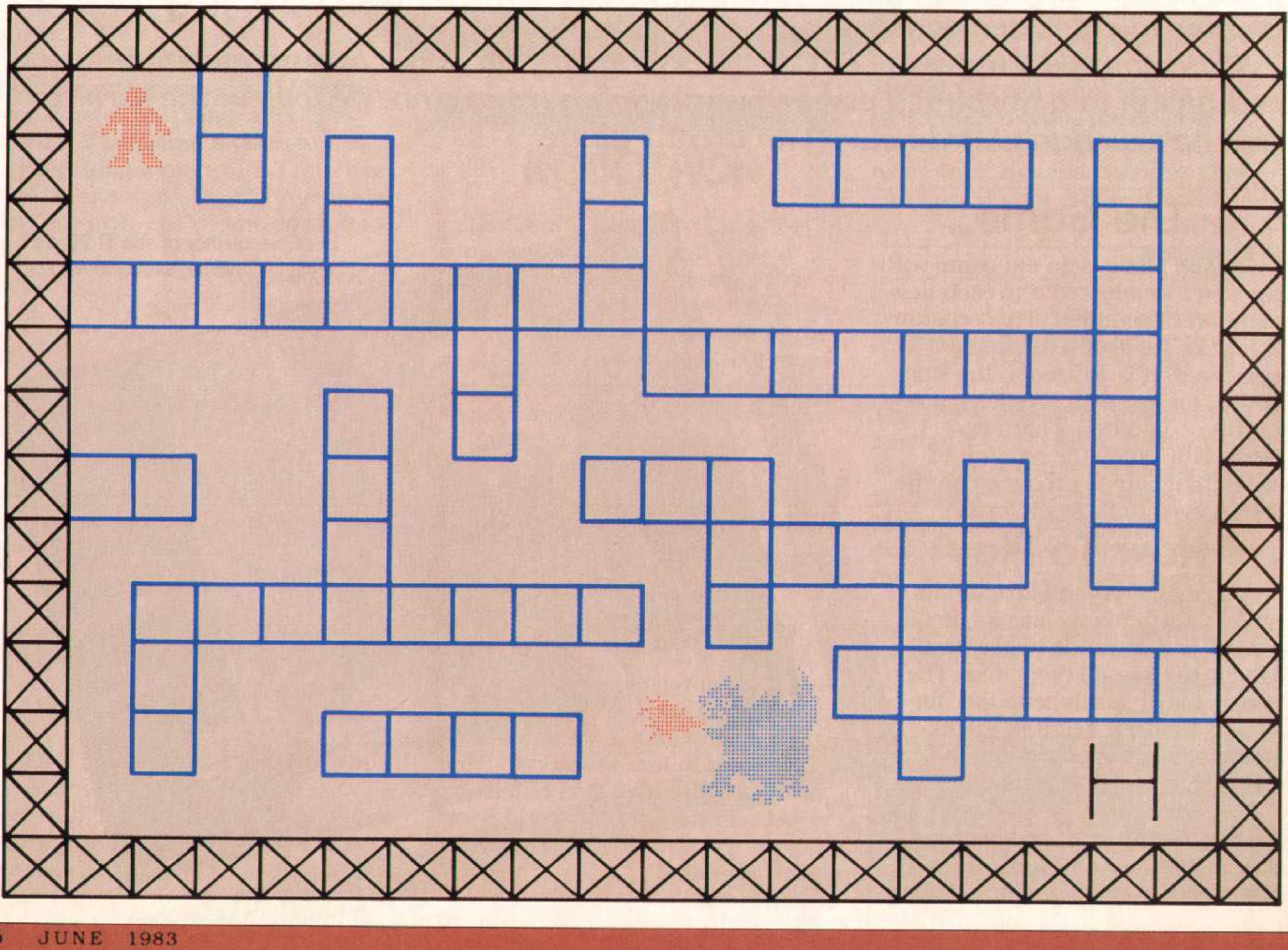
The joystick is programmed for only four-direction movement—no diagonals. If you must rest, there are two areas in the maze too small for the dragon to get near you. Otherwise, just keep moving or take your chances.

Variations And Strategy

There are five variations in *Dragon Maze*. The first is standard—you can see everything—the man, the dragon and the maze. The trick here is to keep moving. In another variation, the dragon is invisible and basically the only way for you to discover where he is, is to bump into him. In a third, the maze is invisible. This is a real test of your memory for turns and patterns.

In a fourth, the man is invisible. One thing that will help you here is remembering that you always start out in the same place and whenever you bump into a wall, you are inevitably returned to the start. In the final variation, the outer borders of the maze disappear. In this case you've got to be sure you don't get too zealous and overshoot the end of the maze or you will be sent right back to the beginning.☐

In order for us to consider your entry, we need the following items: a complete computer program, a brief game description, photographs or drawings of the graphics, a picture of you and a self-addressed, stamped envelope. Send it all to: First Screening, Electronic Fun, *350 East 81st St., New York, NY 10028. Include your phone number so we can reach you.*



```
REM:TITLE
 85 CALL CLEAR
 90 PRINT TAB(12) ; “*1982-COE*”
 91 PRINT
100 PRINT “**DRAGON MAZE**”
101 PRINT
102 PRINT
REM:GAME SELECT
105 PRINT “SELECT VERSION”
106 PRINT
107 PRINT “15 - NORMAL”
108 PRINT “13 - INVISIBLE DRAGONS”
109 PRINT “2 - INVISIBLE BORDER”
110 PRINT “5 - INVISIBLE MAZE”
111 PRINT “7 - INVISIBLE MEN”
120 INPUT S
REM:INSTRUCTIONS
140 PRINT “   YOU MUST MOVE YOUR”
141 PRINT “MAN THROUGH THE MAZE
      TO”
142 PRINT “HOME. YOU LOSE ONE OF”
143 PRINT “THE 3 MEN YOU
      STARTED”
144 PRINT “WITH IF THE DRAGON
      GETS”
145 PRINT “HIM. HITTING A WALL OR”
146 PRINT “BORDER SENDS YOU BACK
      TO”
147 PRINT “START.”
148 PRINT “   USE THE JOY-STICK TO”
149 PRINT “MOVE THROUGH THE
      MAZE.”
150 PRINT
151 PRINT
152 PRINT “   THE DRAGON WILL
      STOP”
153 PRINT “MOVING WHILE YOU ARE.”
154 PRINT
155 PRINT TAB(10) ; “PRESS ENTER”
REM:DEFINE CHARACTERS
200 CALL
      CHAR(128,“1818FFBD3C3C2424”)
201 CALL
      CHAR(136,“061F337FFF67070F”)
202 CALL
      CHAR(137,“01060C1C1C9EFE”)
203 CALL
      CHAR(138,“0F0F070301000101”)
204 CALL
      CHAR(139,“FEFCFCFCFE36E6CC”)
205 CALL
      CHAR(144,“FFC3A59999A5C3FF”)
206 CALL
      CHAR(152,“FFFFC3C3C3C3FFFF”)
207 CALL
      CHAR(129,“004020383EFF1E3C”)
REM:SET COUNTERS
210 BC=0
211 PC=500
213 LC=3
REM:DEFINE COLORS
220 CALL COLOR(15,2,1)
221 CALL COLOR(16,5,1)
222 CALL COLOR(1,1,1)
223 CALL COLOR(14,13,1)
224 CALL COLOR(13,9,1)
225 CALL SCREEN(S)
REM:START GAME
240 INPUT A$
245 GOSUB 9800
250 MR=4
251 MC=5
252 DRA=20
253 DCA=16
254 GOSUB 9700
255 CALL HCHAR(24,4,128,1)
256 CALL HCHAR(24,7,128,1)
257 CALL HCHAR(21,28,72,1)
REM:MOVE MAN(PLAY BEGINS)
400 CALL JOYST(1,X,Y)
401 IF ABS(X)=ABS(Y) THEN 450
418 PC=PC-1
419 CALL SOUND(100,1200,15)
422 MR=MR-(Y/4)
423 MC=MC+(X/4)
425 GOTO 5000
450 PC=PC-1
451 GOSUB 9600
452 GOTO 400
REM:IF NEXT POSITION IS “MAZE”
1500 MR=4
1501 MC=5
1502 PC=PC-5
1505 CALL SOUND(100,440,10,220,10)
1510 CALL HCHAR(MR,MC,128,1)
1520 GOTO 400
REM:IF NEXT POSITION IS THE
      “DRAGON”
1600 CALL SOUND(100,1000,0)
1601 CALL SOUND(250,-3,0)
1602 LC=LC-1
1603 IF LC=2 THEN 1610
1604 IF LC=1 THEN 1615
1605 IF LC=0 THEN 11000
1610 CALL HCHAR(24,7,32,1)
1611 GOTO 1620
1615 CALL HCHAR(24,5,32,1)
1620 CALL HCHAR(DRA,DCA,136,1)
1621 CALL HCHAR(DRB,DCB,137,1)
1622 CALL HCHAR(DRC,DCC,138,1)
1623 CALL HCHAR(DRD,DCD,139,1)
1624 CALL HCHAR(DRA,DCA-1,129,1)
1625 FOR DELAY = 1 TO 150
1626 NEXT DELAY
1629 CALL HCHAR(DRA,DCA-1,32,1)
1630 MR=4
1631 MC=5
1632 CALL HCHAR(MR,MC,128,1)
1635 GOTO 400
REM:IF NEXT POSITION IS “HOME”
1700 CALL
      SOUND(100,220,10,440,10,660,10)
1701 BC=BC+1000
1702 PC=500
1703 MR=4
1704 MC=5
1706 PRINT TAB(10) ; “HOME SAFE !!”
1707 PRINT
1708 PRINT TAB(10) ; “1000 BONUS
      POINTS.”
```

Continued

```
1710 IF LC > 1 THEN 1712
1711 PRINT TAB(10) ; "STILL 1 LIFE
       LEFT!"
1712 PRINT TAB(10) ; "STILL"; LC ;
       "LIVES LEFT!"
1713 FOR DELAY = 1 TO 500
1714 NEXT DELAY
1715 GOSUB 9800
1716 GOSUB 9711
1717 CALL HCHAR(MR,MC,128,1)
1720 IF LC=2 THEN 1726
1721 IF LC=1 THEN 1730
1725 CALL HCHAR(24,7,128,1)
1726 CALL HCHAR(24,5,128,1)
1730 GOTO 400
REM:POSITION TEST
5000 CALL HCHAR(MRO,MCO,32,1)
5010 CALL GCHAR(MR,MC,X)
5021 IF X=136 THEN 1600
5022 IF X=137 THEN 1600
5023 IF X=138 THEN 1600
5024 IF X=139 THEN 1600
5025 IF X=144 THEN 1500
5026 IF X=152 THEN 1500
5027 IF X=72 THEN 1700
5030 CALL HCHAR(MR,MC,128,1)
5031 GOTO 400
REM:MOVE DRAGON
9600 CALL HCHAR(DRA,DCA,32,1)
9601 CALL HCHAR(DRB,DCB,32,1)
9602 CALL HCHAR(DRC,DCC,32,1)
9603 CALL HCHAR(DRD,DCD,32,1)
9609 RANDOMIZE
9610 DRA=INT((18)*RND)+3
9611 DCA=INT((24)*RND)+4
9612 DRB=DRA
9613 DCB=DCA+1
9614 DRC=DRA+1
9615 DCC=DCA
9616 DRD=DRA+1
9617 DCD=DCA+1
9620 CALL GCHAR(DRA,DCA,A)
9621 IF A=152 THEN 9610
9624 CALL GCHAR(DRB,DCB,B)
9625 IF B=152 THEN 9610
9626 CALL GCHAR(DRC,DCC,C)
9627 IF C=152 THEN 9610
9628 CALL GCHAR(DRD,DCD,D)
9630 IF D=152 THEN 9610
9631 IF A=128 THEN 9655
9632 IF B=128 THEN 9655
9633 IF C=128 THEN 9655
9634 IF D=128 THEN 9655
9640 GOSUB 9711
9645 CALL HCHAR(21,28,72,1)
9650 GOTO 400
9655 GOTO 1600
REM:DRAW DRAGON
9700 DRB=DRA
9701 DCB=DCA+1
9702 DRC=DRA+1
9703 DCC=DCA
9704 DRD=DRA+1
9705 DCD=DCA+1
9710 CALL HCHAR(MR,MC,128,1)
9711 CALL HCHAR(DRA,DCA,136,1)
9712 CALL HCHAR(DRB,DCB,137,1)
9713 CALL HCHAR(DRC,DCC,138,1)
9714 CALL HCHAR(DRD,DCD,139,1)
9720 RETURN
REM:DRAW MAZE
9800 CALL CLEAR
9801 FOR X=1 TO 10
9802 READ A,B,C,D
9803 CALL HCHAR(A,B,C,D)
9804 NEXT X
9810 FOR X=1 TO 18
9811 READ A,B,C,D
9812 CALL VCHAR(A,B,C,D)
9813 NEXT X
9820 RESTORE
9825 RETURN
REM:DATA FOR MAZE
10000 DATA 2,3,144,28,23,3,144,28,6,21,
        152,3,8,4,152,14,9,8,152,9,12,4,
        152,3
10001 DATA 13,16,152,8,15,7,152,8,18,
        10,152,3,19,25,152,5
10002 DATA 3,3,144,21,3,30,144,21,3,7,
        152,3,3,13,152,3,3,23,152,3,5,10,
        152,3
10003 DATA 5,17,152,3,5,27,152,11,7,29,
        152,2,9,14,152
10004 DATA 11,10,152,4,12,24,152,8,16,
        7,152,5,17,20,152,6
10005 DATA 18,13,152,5,21,26,152,2,14,
        17,152,5,14,15,152,2
REM:GAME OVER
11000 CALL CLEAR
11001 PRINT TAB(15) ; "GAME OVER"
11002 PRINT
11003 PRINT
11004 PRINT
11010 PRINT TAB(10) ; "SCORE...";
        (PC*10)+BC
11020 PRINT
11021 PRINT
11022 PRINT
11023 STOP
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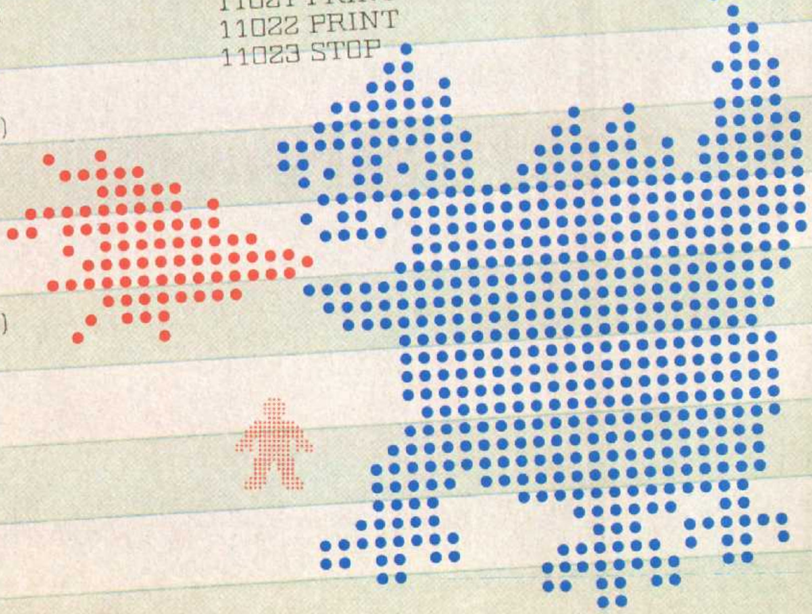

ELECTRONIC FUN MAGAZINE'S

HOME

1. MS. PAC-MAN (A) (Atari)
2. E.T. (A) (Atari)
3. FROGGER (A) (Parker)
4. PHOENIX (A) (Atari)
5. RIVER RAID (A) (Activision)
6. PITFALL! (A) (Activision)
7. VANGUARD (A) (Atari)
8. RAIDERS OF THE LOST ARK (A) (Atari)
9. CENTIPEDE (A/VCS) (Atari)
10. DONKEY KONG JR. (C) (Coleco)

ARCADE

1. POLE POSITION (Atari)
2. Q*BERT (Gottlieb)
3. FRONT LINE (Taito)
4. BABY PAC-MAN (Bally)
5. POPEYE (Nintendo)
6. JOUST (Williams)
7. MILLIPEDE (Atari)
8. MOON PATROL (Williams)
9. GALAGA (Bally)
10. MS. PAC-MAN (Bally)

The arcade Top Ten courtesy of REPLAY MAGAZINE, the coin-op Bible. The list of Top Ten home games is the result of an independently conducted survey of retailers across the country. (A) indicates Atari, (I) indicates Intellivision and (C) indicates ColecoVision.

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BUYER'S GUIDE

Continued from page 81

Earth's orbiting solar power station, "The Grid." To combat them the humans have developed a lightning-fast battleship known as "The Gridrunner." As a pilot, you must avoid the Droids' weapons and annihilate them before they attack. Cartridge only. **$39.95.** *Address: 71 Park Lane, Brisbane, CA 94005.*

IMAGIC has two games for the VIC-20 in the Arcade category, *Demon Attack* and *Atlantis*. Company's Pick: *Demon Attack*. One of last year's most popular Atari VCS games is translated to the VIC-20. Players are pitted against a never ending armada of fast moving high resolution adversaries who drop all manner of death-dealing devices in their attempt to conquer the world. Cartridge only. **$34.** *Address: 981 University Ave., Los Gatos, CA 95030.*

INFOCOM has five games for the Commodore 64 in the Strategy category. The Strategy games include *Zork I, Zork II, Zork III* and *Starcross*. Company's Pick: *Deadline*. Interactive mystery pits players against a 12-hour time limit to solve a baffling murder case and work from an actual dossier on the crime as they try to piece together a myriad of clues. Disc only. **$49.95.** *Address: 55 Wheeler St., Cambridge, MA 02138.*

KRELL has 20 games for the Commodore 64 and PET series in the Educational category. The Educational games include *The Amazing Ben, Isaac & F.G. Newton* and *Botticelli*. Company's Pick: *Pythagoras & The Dragon*. *Dungeons & Dragons*-style adventure has you attempting to defeat the evil forces that surround you by utilizing information supplied by the computer. Disc only. **$39.95.** *Address: 1320 Stonybrook Rd., Stonybrook, NY 11790.*

MICROCOMPUTER GAMES (Avalon Hill) has 13 games for the VIC-20, Commodore 64 and PET series in the Arcade and Strategy category. Arcade games include *B-1 Nuclear Bomber, Planet Miners* and *Andromeda Conquest*. Strategy games are *Midway Campaign, Computer Stocks & Bonds* and *Computer Football Strategy*. Company's Pick: *Telengard*. In the mysterious underworld of Telengard there are fifty levels of ever more complex mazes for mighty adventurers to explore. Various means of survival tactics are at the adventurers' disposal in this real-time game. Cassette only. **$24.** *Address: 4517 Harford Rd., Baltimore, MD 21214.*

MICRO-WARE has six games for the VIC-20 in the Arcade and Strategy categories. The Arcade titles include *Key Quest, Tick Attack* and *Dot-A-Lot*. In the Strategy area there's *Bomber Word* and *Triple Play*. Company's Pick: *Zap*. Climbing the corporate ladder is a lot like *Donkey Kong* in this maze game which asks young go-getters to run across the floors of a large office building in order to get to the top. Cartridge only. **$29.95.** *Address: PO Box 113, Pompton Plains, NJ 07444.*

NUFEKOP has 10 games for the VIC-20 in the Arcade category. Titles include *3-D Man* and *Defender On Tri*. Company's Pick: *Exterminator*. **$12.95-$24.95.** *Address: P.O. Box 156, Shady Cove, OR 97539.*

SCHOLASTIC (Wizware) has six games for the VIC-20 in the Educational category. The titles include *The Microzine, Turtle Tracks, Square Pairs* and *Electronic Birthday*. Company's Pick: *Nerd Alert*. This one is so funny we forgot to laugh. The Nerds have a football filled with Nerd gas which the hero, Jocko, must try to block to prevent the Nerds from taking over Nerd High. **$29.95.** *Address: Scholastic, Inc. 730 Broadway, New York, NY 10003.*

SENTIENT SOFTWARE has two games for the Commodore 64 in the Arcade and Adventure category. Arcade title is *Gold Rush*. The Adventure game is *Cyborg*. Company's Pick: *Cyborg*. Text adventure game accepts full sentence input to direct your character through the science fiction story line whose challenge is to figure out the plot. Disc only. **$30-$35.** *Address: PO Box 4929, Aspen, CO 81612.*

SIERRA ON-LINE has one game for the VIC-20 in the Arcade category. Company's Pick: *Crossfire*. You have three ships, a limited amount of ammunition and alien attackers with the ability to reincarnate themselves four different times. It's up to you to kill the outworlders while keeping track of the shots fired and reloading when time allows. Cassette only. **$29.95.** *Address: Sierra On-Line Building, Coarsegold, CA 93614.*

SIRIUS has five games for the VIC-20 and Commodore 64 in the Arcade category. Arcade titles include *Deadly Duck, Snake Bite, Turmoil* and *Type Attack*. Company's Pick: *Fast Eddie*. Fast Eddie is on a frantic treasure hunt, climbing up and down ladders everywhere in search of more prizes. Things would be a lot easier if it weren't for all those pesky little Sneakers that jump him. Adapted from the Fox game. *Address: 10364 Rockingham Dr., Sacramento, CA 95827.*

SPINNAKER has two games for category. The Arcade games are *Fast Food* and *Cosmic Creeps*. Company's Pick: *Fast Food*. VIC-20 version of the company's Atari VCS game which throws a barrage of hamburgers, hot dogs, french fries and other goodies at an eager mouth. But watch out. Eat a purple pickle and it's the first step to a stomach ache. Price not available. *Address: 4334 Bryant St., Fremont, CA 94539.*

SYNAPSE has six games for the VIC-20 and Commodore 64 in the Arcade category. The Arcade games include *Astro Patrol, Drelbs, Survivor, Gridworld* and *Pharaoh's Curse*. Company's Pick: *Fort Apocalypse*. Your target is a fortress deep within the Earth, lorded over by the Kralthans. You must capture fuel and weapons to free the enslaved masses but must first overcome the dread Kralthan defenses and navigate the vaults of Draconis. **$34.95.** *Address: 5221 Central Ave., Richmond, CA 94804.*

TELESYS has two games for the VIC-20 in the Arcade the VIC-20 and Commodore 64 in the Educational category. The Educational games are *Snooper Troops I* and *Snooper Troops II*. Company's Pick: *Snooper Troops I*. Child-oriented detective game allows kids to turn the tables on adults by asking probing questions regarding a haunted house. Players are armed with a Snoopmobile and an insatiable thirst for the truth. Disc only. **$49.95.** *Address: 215 First St., Cambridge, MA 02142.*

THORN EMI has five games for the VIC-20 and Commodore 64 in the Arcade category. The Arcade titles include *River Rescue, Submarine Commander* and *Fourth Encounter*. Company's Pick: *Mutant Herd*. Hordes of plutonium crazed mutants are attacking the power station to satisfy their radioactive hunger and it's up to you, and your twin laser beams, to fight them off and get them back to their lair. "It's a really solid hand-eye coordination game," says Thorn EMI's John Smodga. "And it really has, you should pardon the expression, a lot of pitfalls."

Cartridge only. **$39.95.** *Address: 1370 Avenue of the Americas, New York, NY 10019.*

TIGER has three games for the VIC-20 in the Arcade category. The Arcade titles include *River Patrol* and *Springer*. Company Pick: *Polaris*. Multi-screen game casts you as a submarine commander under attack by every conceivable weapon of war including planes, patrol boats and enemy subs. Cartridge only. **$34.95.** *Address: 909 Orchard, Mundelein, IL 60060.*

TOPOLOGIC is a brand new company. It has one game, *Collision*, (so far) for the Commodore 64 computer. Company Pick: *Collision*—an arcade-style game in which you and your opponent draw lines on the screen avoiding obstacles, each other and yourself. **$15.95** (disk), **$12.95** (cassette) *Address: Box 752, Burlington, IA 52601.*

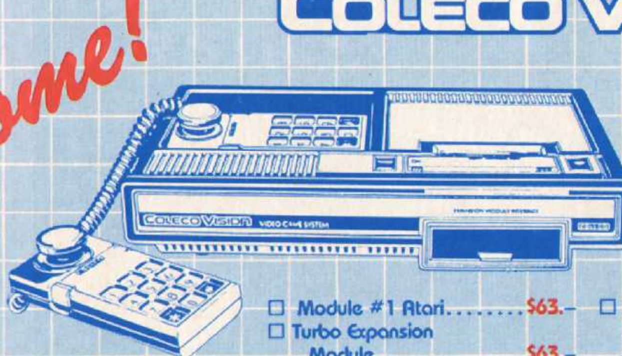
TRONIX has six games for the VIC-20 in the Arcade category. The Arcade titles include *Sidewinder* and *Galactic Blitz*. Company pick: *Swarm!* All-out bug battle as players are attacked from all directions by a barrage of deadly android wasps and alien creatures. Any contact means instant destruction. Cartridge only. **$29.95.** *Address: 701 Manchester, Inglewood, CA 90301.*

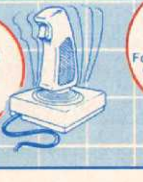
UMI has 24 games for the VIC-20 and Commodore 64 in the Arcade and Strategy categories. The Arcade titles include *Spiders of Mars*, *Video Vermin*, *Cloudburst* and *Super Amok*. In the Strategy area there's *Grand Master* and *Othello*. Company's Pick: *Motor Mania*. Turbo-style race game finds players racing down ever-changing city and country landscapes attempting to avoid oil puddles, other cars and a myriad of obstacles. Game also features a full display of working gauges. **$29.95.** *Address: 3503 Temple Ave., Pomona, CA 91768.*

VICTORY has 20 games for the VIC-20 and Commodore 64 in the Arcade, Adventure and Strategy categories. Arcade games include *Kongo Kong*, *Annihilator* and *Pollywog*. Adventure titles feature *Adventure Pack I* and *Adventure Pack II*. In the Strategy area there's *Trek* and *Strategy I*. Company's Pick: *Grave Robber*. Deep in a graveyard's underground vault you steal through mysterious rooms in an attempt to locate a valuable diamond. Cassette only. **$14.95.** *Address: 7 Valley Brook Rd., Paoli, PA 19301.*

ZIMAG now has one game for the VIC-20 in the Adventure category. *The Coogan File*. It's about a bungling detective and a nuclear reactor. It requires 16K and is available on disk and cassette. **$29.95-39.95.** *Address: 14600 South Broadway, Gardena, CA 90248.*

NOTE: Some of the games in this listing may not be available yet, since games scheduled for July release have been included. All games listed should be out by the end of the summer.





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GAMEMAKERS

Continued from page 79

build into all my computer games and I always start from there.

EF: Do you have a process for producing games at CCW?

BD: The process is developing and we're beginning to realize that there are different processes needed for different types of games. We're developing the processes using my personal predilection toward having something to play with. We're doing what Dan Oehlsen calls "electronic storyboarding." The idea is to get the game concept up on the screen as soon as possible. It not only gives us something to look at and evaluate, but gives us something to play with. We leave as many of the options, the variables, open as possible so that we can manipulate with all those variables and see how they affect the play of the thing. I think that the more people try to use paper and pencil in the pre-computer medium to communicate a computer game design, the less clear the game is going to be. I've seen things look good on paper that just look stupid as hell on screen. I figure as long as you're starting with something that's fun to play with, you can't really go too far wrong. And that's the process.

Enter: Dan Oehlsen, Project Manager; Sandra Damashek, Creative Manager; and Joachim Kim, Software Designer. With DeKoven, they form the core of a team.

EF: What is the argument for a team approach to video game design?

SD: We all come from very different backgrounds, and the team approach enables us to benefit from lots of perspectives. It allows for much broader ideas and for the games to be much richer.

EF: Each of you will be given credit in the instruction manuals, but none of you will be given "star" credit.

SD: Right, CCW is the star. It's a model that comes from Children's Television Workshop that has been adopted here, the concept of taking a multi-disciplined approach to developing an educational, entertaining line of products.

EF: It's difficult enough to get four people to agree on what's good for lunch, much less what's fun to play.

DO: I don't think it's necessary for everyone to agree. If your goal is to be in consensus on the game, you're never going to get past the initial title screen. One of the strengths of this organization is that people disagree with each other a lot.

EF: Bernie says the biggest limitations you fight against as a team are time and ignorance. Whose ignorance?

BD: We're doing very new stuff. We want to give kids the best stuff we can, without following any precedent. So the ignorance is our own. "How do we do it best?" We don't know.

EF: Tell me about one of the games you're all working on.

DO: Well, *Peanut Butter Panic* is a game we've all had some hand in. It's for the TRS-80 color computer and is due for release this summer. All the people in this room, with the exception of Bernie who has contact with other projects, are involved in the project of making 10 games and activities for the TRS-80.

EF: What is your input into PEANUT BUTTER PANIC?

DO: At the time that game was in its formative stages, I was the researcher on the project.

SD: My major responsibility, other than helping with game ideas which everybody does, is to coordinate those ideas. I work with the artist on the graphics. I do a lot of the flow charting that helps people look at a game idea and see what's working and what's not. And I'm also in charge of documentation that goes out with the games.

JK: Unfortunately, I guess the only input I had into that game was a technical one, because I was working on another game at the time and could not attend the creative meetings.

BD: Actually, *Peanut Butter Panic* was just about finished when I came on board and when I first saw it I was very impressed with the interaction. They had developed very nice play principles, something really fun to play with. But it seemed to lack clarity, a strategic sense of what you were trying to do. The only thing I did was work on the stars and how they relate to the gameplay. So no, the stars, instead of being random, have a logic to the way they move. And instead of being replenished as you grab them, they become used up and the challenge changes.

EF: In total, perhaps a dozen people at CCW touched the design of PEANUT BUTTER PANIC in some way?

DO: Yes, there were about 10 people on the team. Probably more than that number touched the game in some way, plus about 50 kids who were involved in testing it and playing with it.

EF: It's unfortunate to think we, being mortals, won't get a chance to play with video games they'll be playing in the 21st century.

BD: That's true. And it's hard to deal with that and I wish you hadn't brought it up.☐

DESIGN DOs AND DON'Ts

Bernie DeKoven offers the following advice to aspiring video game designers:

Let's say you have this neat idea that you think could make a wonderful video game. If you are really taking this seriously, the first thing you've got to do is get it programmed so you have something to play with. Don't bother writing down long descriptions of the action and graphics, calling people on the phone and sending letters to companies because nobody has time to deal with that kind of stuff anymore. Get it programmed. If you still like the game after you've actually played with it on the screen and you know it's going to be good, then see if you can interest some investors so you can make a finished version all by yourself. Now you have something you can send game companies or designers that they can actually interact with. It's not just something to study—it's something to play with. People are not going to understand story boards no matter how pretty or photographic or detailed they are. Flow charts are meaningless except to a programmer. And a written description is only useful for a historian.

BUCK ROGERS

Continued from page 22

applies throughout the entire game.

You'll notice that your ship has limited vertical mobility. You'll also notice that during the first round the three-legged aliens jump much higher than you are able to fly. To increase your chances of hitting them, follow their movements as closely as possible when they first appear at the end of the trench.

In round two, keep in mind again that you don't want to remain in one spot for too long. The disc-shaped craft will launch torpedoes at you as they approach. Don't worry about the ships themselves—they won't collide with you.

During the enxt trench sequence you'll encounter two obstacles—a series of gray partitions and silver-winged ships that look like metallic falcons. Steer around the fences and shoot for the ships. At first, the birds (500 points) will appear well out of your rage. As they approach, they will plummet into the trench. Be ready!

Just before you reach the showdown with the Source ship, you'll travel over the surface of some unnamed planet. Again, the object here is just to stay alive.

In comparison to the journey that borught you there, the Source ship confrontation is areal anticlimax. You only need to knock out the ship's four engines. Once this is done, a direct hit on the center of the ship will blow it to smithereens. From here, you start again.☐

BURGERTIME

Continued from page 23

burger parts as they drop.

An even better trick is to remain motionless until one or more of the bad guys are right on your tail. Then run for an ingredient. If it falls with any of the villains on top, that burger part will drop two levels instead of one. If no burger parts are nearby and your edible enemies are closing in, move in a circle. Messrs. Egg, Hot Dog and Pickle aren't smart enough to figure out what you are doing until it is too late. They will blindly follow you and will rarely, if ever, change direction in an attempt to cut you off.

Once you have moved most of the burger parts to the lower half of the screen, spend some time pacing back and forth around the center of the playfield. Here is where the bonus objects appear (cups of coffee, fires and ice cream cones). Each is worth some extra points and one additional pinch of pepper. They don't hang around too long, so be quick.

When certain death seems inevitable, go for the pepper button. Pepper is thrown in the direction Pete is facing. The effective range of pepper is quite limited so be sure your target is within range before throwing it. Don't make the mistake of overseasoning your prey.☐

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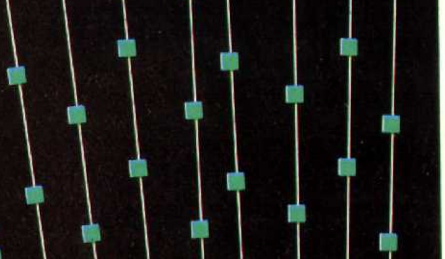

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GAME WORKOUT

Continued from page 43

special Demonstration Mode which allowed non-playing visitors to view all the screens, but there's no way for a player to get through all the screens unless he or she conquers them first. Coleco should give this some thought. It seems long overdue for a system so advanced.

Is the Super Game Module the first product in a line of peripherals designed to turn the ColecoVision into a home computer?

The full capacity of a game wafer is something on the order of 120 full screen pages of information. Since most games consist of 20 screens or less—especially most arcade games, which Coleco has been diligent about licensing and translating for its home system—it seems unlikely that the unused capacity of the tape drive of the Super Game Module will simply be left to lie dormant. Games with 120 screens would certainly be interesting, but why stop at games? One hundred and twenty screen pages means 120 pages of *anything*.

There's another clue: The Expansion Module #3 is itself expandable, via an interface port on its front right-hand panel. What goes here is anybody's guess at the moment, but it's probable Coleco doesn't intend you to keep your pet mouse in it. My guess is that it is to be used either as a way of ganging together several Super Game Modules, in the same way computer users can attach multiple disk drives in serial order, or as a bypass that will allow direct access to the ColecoVision central processor by some other peripheral.

All these mysteries should be cleared up soon. But for now, the Super Game Module's only parallel is computer games.☐

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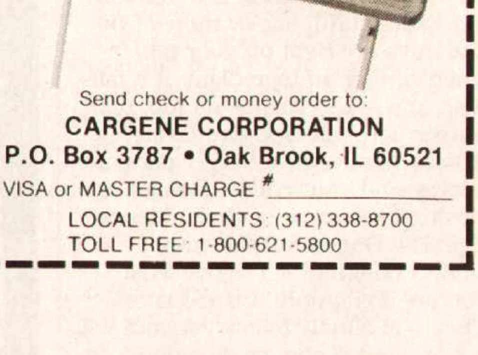

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VOICE RECOGNITION

Continued from page 49

boring, too. It's like reading a dictionary into the computer."

Yuschik envisions a day when we'll each have something that looks like a credit card with our voice patterns imprinted on it. "I'll just plug it into the terminal and all of a sudden, the computer will recognize me," he says.

Conrad thinks it's more likely that a speaker verification system will evolve, where a user will be instructed to say a few words to the computer until it "knows" an individual's voiceprint, much like a fingerprint.

"Ten years from now, we'll have worked through the language problems," Yuschik predicts. "We'll have gotten a much more natural interface, we'll have worked through the speaker normalization problem and we'll have mass-produced a lot of the electronics that are in the computer with the special purpose of recognition to the point where I could see this being an add-on to almost any type of system."

Right now, speech recognition peripherals cost, on the average, between $20,000 and $30,000, according to Yuschik. In 10 years, he believes the price will have dropped to $5,000.

"And to push it a little bit further, I could see things going really totally mass-produced in 15 years, and we might get this thing down to $500 minimum," he adds.

However, researchers are not yet looking toward the day when each of us has a home computer that both speaks and understands. "It's a fun toy for home use, but I don't know that I see it as being necessary," says Levine. "I think that in a few years, every office environment will be using them, however. It will start out as an executive perk and move down the ladder. And the reason executives will use voice recognition peripherals first is they tend to shy away from computers because they have to type. Executives don't like to type."

But once executives have voice-activated computers, lower-echelon workers will want them, too. The potential for saving time and increasing productivity is enormous, says Levine.

So for the next decade, I.M. will have to continue to hunt and peck on a keyboard to communicate with his computer. His computer may talk to him, meanwhile, but he'll have to content himself with the dream of a day when he can just lean back in his swivel chair and bark at his computer, "Take a letter!" and it will.☐

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LETTERS

Continued from page 11

FLAT BERZERK

I've had my *Berzerk* cartridge since this fall and I wanted to say that I disagree with Randi Hacker's review in the February issue of your magazine. Although it is a good game, it's very flat compared to the arcade version. I don't blame the designer—I think it's a good attempt—but I feel your readers should know that the scrolling of the arcade version is not there and, of course, the voice is missing. There are many times when you are dead as the next screen comes on (from a robot standing on your head). Comparing the VCS version of *Berzerk* to the arcade version is as bizarre as comparing the VCS *Pac-Man* to the real thing.

Wilhelm Murg
Pawhuska, OK

HOME SCOREBOARD

I don't know if this is a record or not, but I've just completed a two-hour-plus session of *Venture*. My score was 3,600,700 at the end. The reason I stopped was due to (1) a very sore neck and (2) I think I may need glasses now. Why don't you put a section in your magazine for top home scores, verifiable by pictures and/or dare I say honesty? I could see where verifying scores over 999,999 could be a problem, but then again you could also have more than one name for first-place contenders. Thanks for a great mag. So many are borderline garbage that it's relieving to have one you can depend on for first-hand—and first-rate—factual info.

Dave Edmonds
San Bruno, CA

TYPO ATTACK

It appears that your computers are having some electronic fun of their own. Within the columns of your April issue (the last paragraph on page 33, to be precise), it appears that your typesetting computers are playing games with the English language. Their game is to take normal words and rearrange them to form new words with (I assume) the same meaning. I particularly like the words amke, mcuh and learni, although I'm having trouble coming up with a pronunciation for the first two. Also, it appears that your computers are so proud of the linguistics that they duplicated the last line of the paragraph on page 94. Perhaps you should rename your publication "Electronic Fun with Computers, Games and Words." I really enjoy your magazine. Please kype up the good work.

G.S.
New York, NY

READER REVIEWED

Do you know that I like your magazine? Do you know why? Because it seems to tell the truth, and that's why I like your magazine. It is good! And it has super articles! I saw an article about *Q*bert* and I liked it! Can you give me a review?

Gene Whitney
West Covina, CA

Well, space is a little tight this month, Gene, but we'd say your letter deserves four joysticks!

QUIRKS CONTINUED

The good thing about your magazine is that not only does it inform me of all important video game news, but it also makes me laugh. I find your magazine much more interesting and helpful (not to mention cheaper) than any other magazine. Keep up the excellent work! P.S.: Could you please give us more "programming Quirks" in future issues? They are loads of fun.

James D. Busby
Trabuco Canyon, CA

Jens von der Heide is already hard at work on a future E.A.T. Report on more Quirks. ☐

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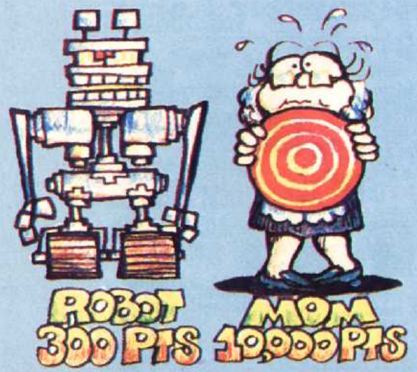
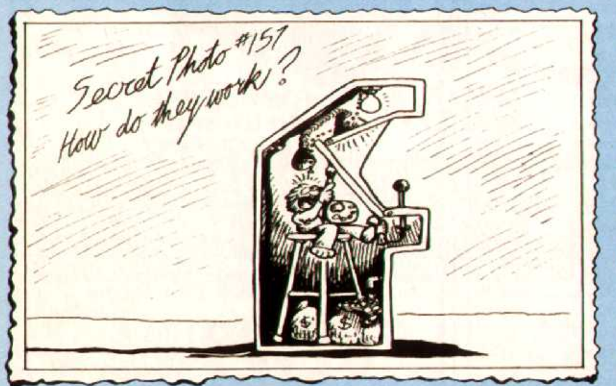
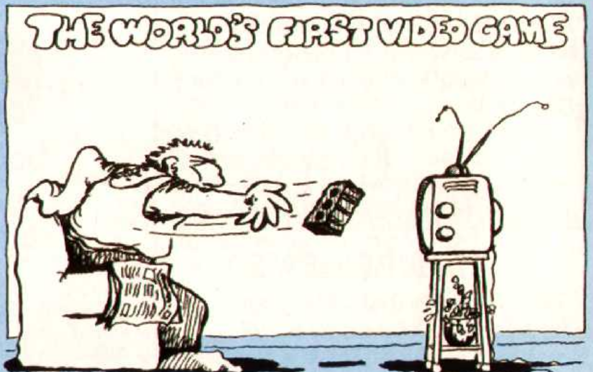


The Fly don't lie, chillun. Remember I told you that V-game wizard-emeritus **Tim Skelly** was coming out with a cartoon book called **Shoot the Robot, Then Shoot Mom?** Well, here it is—living proof, right here on this page (note scores on **Mom** and **Robot**)... Big Doings at Starpath these days. Seems the Santa Clara cartridge-power mavens are thinking about bringing out **Superchargers for game consoles other than the VCS and Sears Arcade**. And there's even a rumor that they're working on a **Starpath voice module** of some kind. Now tell me: How many of you VCS diehards wouldn't need ketchup to eat that one right up?... Fly's nomination for Video Game Brain-Toaster of the Year: Atari's **Quad Run** for the VCS. Not only do you have to shoot balls at zillions of enemies—you also have to run around and catch the balls after you fire them. Perfect for that space case in your family... Computer game pioneer **Bill Budge** (the man behind **Raster Blaster**) has joined up with a new company called **Electronic Arts**—a venture headed by **Trip Hawkins**, one of the designers of Apple's new **Lisa**. Among EA's first Atari 800 releases: **Archon** (a chess and fantasy combo), **MULE** (which teaches you basic economics while you play) and Budge's ingenious **build-your-own pinball game** with options that have to be seen to be believed... When is **Taito** gonna get on the stick and put **Zookeeper** in the arcades? I'm tired of having to buzz out to the West Coast every week to play it in Atari's giant Silicon Valley rumpus room... **Synapse Software** is quickly shifting into Blitz-Release Mode. They'll be scattergunning no less than **32 new games** for four different home computers through the summer. They say they've got 50 programmers on the case, so that number can't be from Bogusville (you've also got the overworked EF reviewers howling with terror at the very mention of your name, guys). Fly's Picks to Click: **Survivor**—which pits the computer against four human opponents simultaneously—and **Shamus II** (yes, gang, I'm a shameless sequel freak)... Compatibility is just around the corner. They say it's out there right now, but nobody's producing it just yet: a device that makes all cartridges compatible with all consoles. You just plug the cart—Atari, Coleco or Mattel—in one end of the device, and a bunch of adapters at the other end plugs into whatever system you've got. Meanwhile, **Mattel** is producing computer games on disks that are multi-compatible: a single game for the IBM PC on one side of the disk, the same game for the Apple II on the other. San Diego's **Cosmi Software** is also getting in on the multicomp act, releasing single-game cassettes and disks with Atari/VIC-20 programs on one side, TI on the other... Looks like **Bye-Bye Games By Apollo**. They've been trying to cover their debts by selling off old inventory, but that inventory just got devalued by a court-appointed trustee to about half what Apollo owes. You read about **laserdisc arcade games** here a couple of months ago, and you'll see more about them next month—but are you ready for **videodisc home games**? That's right—Activision, Atari, Odyssey, Radio Shack and Sony are all said to be looking into the possibilities of videodisc games for home computers... The Fly on the wall says it's time to go. Keep writing and may your lasers never fuse... □




THE WORLD'S FIRST VIDEO GAME

"The Fly"

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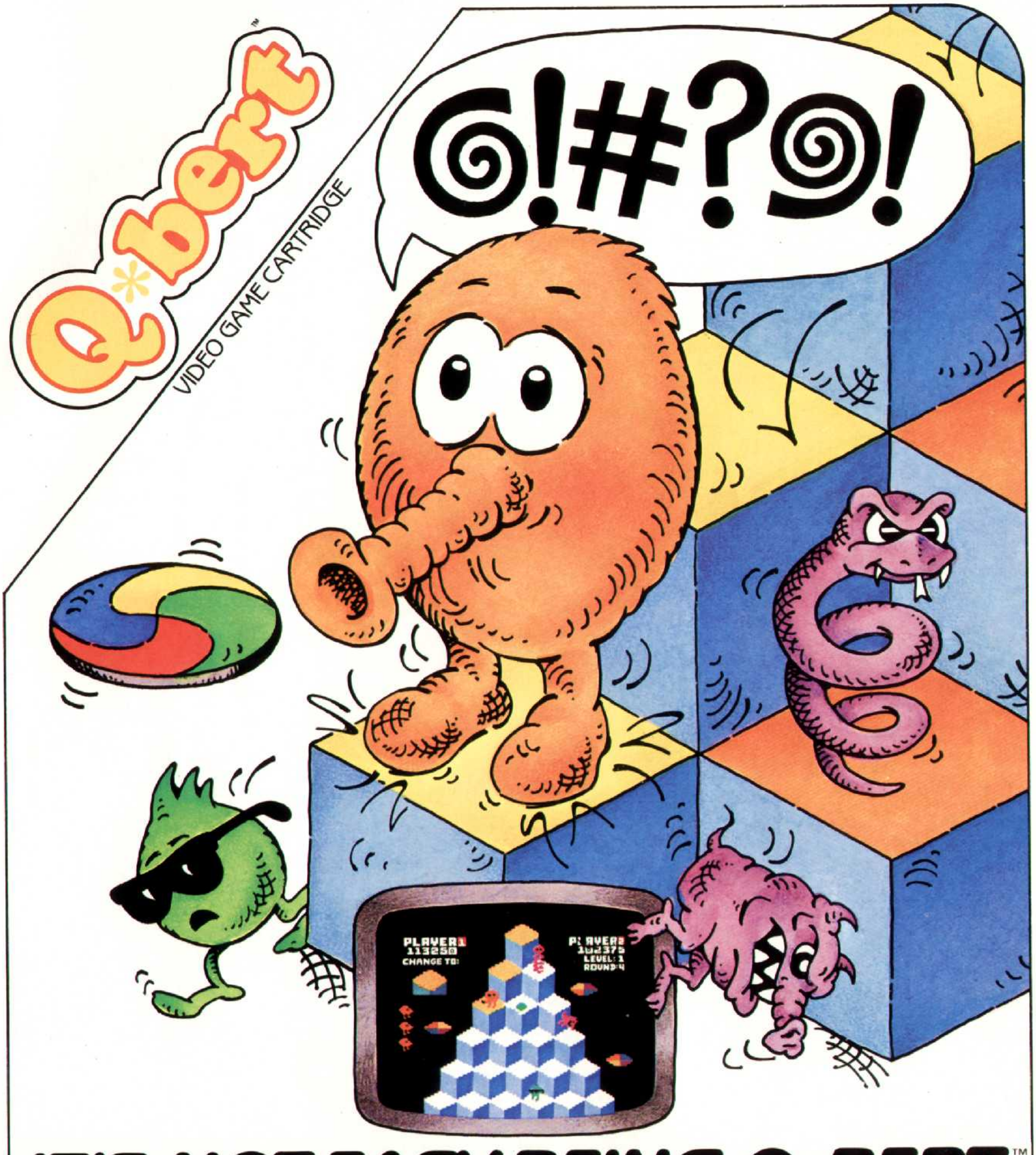

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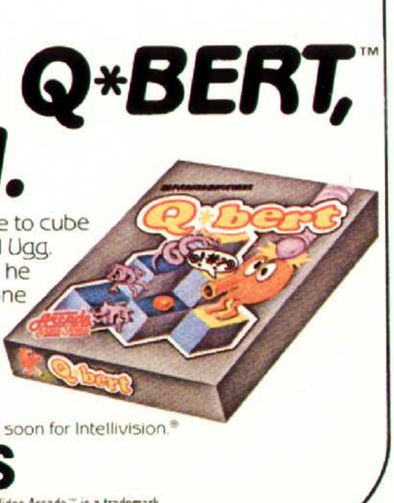

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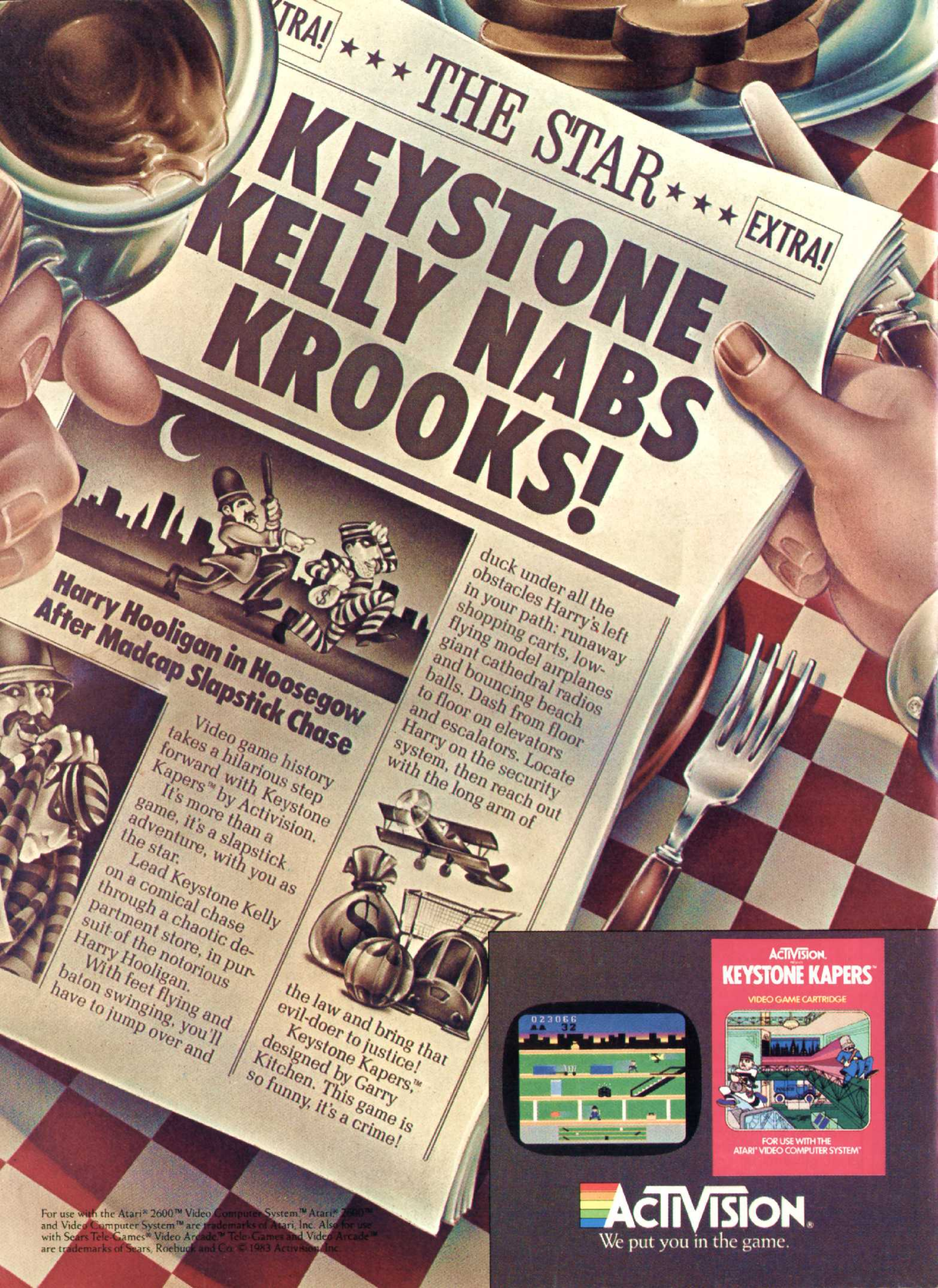

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